

**INVEST IN PROPERTY 84 (PTY) LTD**  
**WHOLE FARM OF VAN ASWEGENS HOEK 493 AND WHOLE FARM**  
**OF GREYLINGSLYN 355, MAGISTERIAL DISTRICT OF BOSHOF**  
**FREE STATE PROVINCE**

**FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT &**  
**ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**



***DEPARTMENTAL REFERENCE NUMBER:***

***FS 30/5/1/2/2/10067 MR***

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**PREPARED FOR:**

Invest in Property 84 (Pty) Ltd  
14 River Street  
Christiana  
2680  
Contact Person: Mr. SJ Mace  
Tel: 076 335 5332  
Email: Shawn.intrax@gmail.com

**PREPARED BY:**

Greenmined Environmental (Pty) Ltd  
Unit MO1, No 37 AECI Site  
Baker Square, Paardevelei  
De Beers Avenue  
Somerset West, 7130  
Contact Person: Ms Sonette Smit  
Tel: 021 851 2673  
Cell: 084 585 5706  
Fax: 086 546 0579  
E-mail: sonette.s@greenmined.co.za



## EXECUTIVE SUMMARY

Invest in Property 84 (Pty) Ltd applied for environmental authorisation to mine alluvial diamonds and gold from a 3 955.7022 ha area that extends over eight properties in the Lejweleputswa magisterial district of the Free State Province. Even though the project application extends over a vast area, the Applicant proposes to divide the mining right footprint (hereinafter referred to as the “major area”) into smaller mining areas of  $\pm 2$  ha each (hereinafter referred to as the “minor areas”) that will be positioned in between areas of agricultural importance. It is proposed that a maximum of three (3) minor areas will be mined at any given time. In other words, the total footprint to be disturbed by mining activities at any given time calculates to  $\pm 6$  ha of the 3 955.7022 ha mining right area, upon which a mined-out minor area has to be rehabilitated prior to the opening of a subsequent minor area. The current project proposal will entail the disturbance of  $\pm 0.15\%$  of the mining right area (major area) at any given time, as concurrent rehabilitation (strip-mining) is proposed.

Upon commencement, the proposed project will trigger listed activities (see below) in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations 2014 (as amended) and therefore requires an environmental impact assessment (EIA) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation.

Should the MR be issued and the mining of alluvial diamonds and gold be allowed, the proposed project will comprise of activities that can be divided into three key phases (discussed in more detail in the report) namely the:

- (1) Site establishment/construction phase which will involve the demarcation of each minor area’s boundaries and required buffer no-go zones pertaining to existing infrastructure and areas of significant importance identified during the environmental impact assessment. Site establishment will further necessitate the clearing of vegetation, stripping and stockpiling of topsoil, and establishing site infrastructure.
- (2) Operational phase that is presently expected to entail the simultaneous mining of three (3) minor mining areas within the footprint of the major mining right area. Upon the prospecting and exploration of allowable (agreed to by the landowner) farm portions, the

opencast and strip-mining method will be used to recover diamond bearing gravel that will be processed, upon which the concentrated product is transported to an off-site recovery plant.

- (3) Decommissioning phase which will include activities that can be divided into medium- and long term categories. In the medium term, rehabilitation will entail the continuous reinstatement of mined-out minor areas through the use of overburden and spoil material to backfill excavation pits, reinstatement of decommissioned processing areas, rehabilitation of settling ponds as well restoring eroded areas and the management of weeds and invasive plant species. In the long term, rehabilitation will comprise the reinstatement of all remaining disturbed areas (mining related) prior to the submission of a closure application to the Department of Mineral Resources and Energy (DMRE).

### **Alternatives:**

Site Layout Alternative 1 was identified during the planning phase by the Applicant and project team, as the preferred and only viable site alternative. During the EIA process, the project team heeded the suggestions, and investigate the possible implementation thereof.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible (Appendix A: Map 4 of appendix H):

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.

- All of the lateral drainage lines which flow into the Vaal River including a 100m buffer.
- The pan systems occurring on the site, including small and degraded pans including a 100m buffer.
- Portions of Camel Thorn (*Vachellia erioloba*) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.

Site Layout alternative 2 was therefore included as per the above study in order to excluded the sensitive areas and found to be the the preferred as the proposed alternative will not necessitate the loss of sensitive areas.

Project Alternative 1 entails the winning of alluvial diamonds and gold from minor areas ( $\pm 2$  ha) to be operated within the footprint of the major footprint area (3 955.7022 ha). The current project alternative proposes the simultaneous operation of three (3) minor areas through opencast and strip-mining methods, with the concentrate, recovered at the processing plant, transported to an off-site recovery plant. The operation of all minor areas will be in accordance with the conditions of the surface use agreement to be signed by the Applicant and landowner prior to the commencement of mining. PA1 entails the disturbance of  $\pm 0.15\%$  of the proposed footprint area at any given time as concurrent rehabilitation is proposed. After supplementary information was obtained no additional project alternatives were deemed necessary during the EIA process.

Technology/Design Alternatives: As with the project alternatives, technology and design alternatives was considered during the EIA process. The following technology/design principles was considered by the Applicant and project team:

- The use of permanent infrastructure as opposed to temporary infrastructure;
- The processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant.

The use of permanent infrastructure as opposed to temporary infrastructure as well as processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant was assessed for the proposed mining but found not environmentally and practically suitable. Therefore the use of temporary infrastructure as well as the processing of the concentrate at a remote recovery plant was deemed the only viable Site Layout alternative as it will have a much lower impact.

No-go Alternative: The no-go alternative entails no change to the status quo and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the area will remain that of agriculture, crop production, and game/livestock farming with the diamond and gold resources unmined. Amongst others, the socio-economic impact of mining on current, and future land uses of the study area was considered as part of the EIA process, and discussed in this document.

### **Public Participation Process:**

During the initial public participation process the stakeholders and I&AP's were informed of the project by means of background information documents that were sent or hand delivered directly to the contact persons, on-site notices that were placed at

conspicuous places and an advertisement that was placed in the Bloemnuus. A 30 days commenting period was allowed which expired on 03 December 2018. A public meeting was also held on 20 November 2018.

The application for a mining right (together with supporting documentation) as well as the application for an environmental authorisation were uploaded simultaneously onto the SAMRAD system on 15th of June 2021. DMRE accepted the application on 6th of July 2021 and the project was assigned with FS 30/5/1/2/2/10067 MR as reference number.

A second advertisement was placed in the Bloemnuus on 22 July 2021 and additional on-site notices were placed. A second public meeting was held on 12 August 2021 where the project was presented and discussed. Meeting minutes are attached as Appendix G2.

In compliance with the timeframes stipulated in the EIA Regulations, 2014 (as amended) the Draft Scoping Report (DSR) was compiled to allow perusal of the report by the I&AP's and stakeholders listed above. A 30-day commenting period, that ended on 23 August 2021, was allowed for perusal of the documentation and submission of comments.

Comments or response received on the DSR were incorporated into the the Final Scoping Report and was submitted to DMRE for decision making. Approval of the Final Scoping Report was received on 6 October 2021. The Draft Environmental Impact Assessment Report was circulated for public comment for a 30-day commenting period. The comments received on the draft EIA & EMPR were incorporated into the final EIA & EMPR to be submitted for decision making to DMRE.

#### **Plan of Study for the Environmental Impact Assessment Process:**

The aspects to be assessed as part of the environmental impact assessment process included, but not be limited to, the following:

1. Various alternatives that will in turn dictate the design and layout of the proposed project.
2. Upon deciding on the preferred alternatives, the applicability of the listed activities in terms of the NEMA EIA Regulations, 2014 (as amended) will be confirmed and aligned with the most recent proposal.

3. The need and desirability of the proposed activity will be discussed in detail and weighed against the no-go option of upholding the status quo at the study area.
4. The inputs received during the public participation process (first- and second phase) will be assessed and considered by the project team during the EIA process.
5. The findings, recommendations and management measure proposed in the desktop Heritage Impact Assessment (inclusive of a palaeontological opinion) was assessed during the EIA process and incorporated into the DEIAR as well were incorporated into the final EIA & EMPR to be submitted for decision making to DMRE.
6. The impact of the proposed project on the physical-, biological-, and human environments will be assessed.
7. Mitigation measures will be proposed to control, modify, remedy or stop the impacts associated with the proposed activity on the surrounding environment.
8. Any additional requirements submitted by the DMRE were incorporated into the DEIAR and treated accordingly as well were incorporated into the final EIA & EMPR to be submitted for decision making to DMRE.

### **Air and Noise Quality:**

The air and noise ambiance of the study area was historically representative of an agricultural environment in which farming equipment operates with occasional dust emissions from denuded areas. The agricultural use of the study area intensified over years, and current land uses include crop production supported by centre-pivot irrigation, orchards, dryland farming, game and livestock farming, diamond mining, and tourism, all of which contribute to the atmospheric quality and noise ambiance of the study area. A surfaced public road, turning from the R708, cross the proposed mining area, and will be used as main access road. This road follows the Vaal River in a south-western direction.

### **Hydrology:**

The Vaal River flows from north east to south west along the border of the site (Free State Province), and is located within the Lower Vaal Water Management Area (WMA No. 10) and the Vaal Downstream/Bloemhof Sub Water Management Area.

The water use in WMA No. 10 is dominated by irrigation, which represents 80% of the local requirements for water. According to the Internal Strategic Perspective for the Lower Vaal Management Area (IPS: Lower Vaal WMA) as compiled by the Department of Water and Sanitation (then Department of Water Affairs and Forestry) in 2004,  $\pm 12\%$  of the requirements is for urban and industrial use, 7% for rural domestic supplies and stock watering, and the remainder for mining purposes.

The water quality within the WMA varies from poor in the highly developed areas to good in the less developed areas. The water quality is impacted on by point discharges from industries, wastewater treatment works, mine dewatering, irrigation return flows and diffuse sources such as runoff from mining and industrial complexes, agriculture and urban areas (IPS: Lower Vaal WMA 2004).

The Vaal river is a perennial system and flows throughout the year but has been heavily modified in terms of its flow and flooding regime by upstream containment dams. The river is also being used for extensive irrigation and water abstraction will also have a significant impact on it. The river contains a significant floodplain or riparian zone but varies in width along the section on the site. Generally, the insides of bends have the widest floodplain while the outsides of bends have the narrowest floodplain. The floodplain has also been affected and modified by agricultural and mining operations.

A few small drainage lines occur in the western portion of the site where the slope increases slightly toward the Vaal River. These drainage lines are quite small and generally without a defined main channel. However, due to the increase in surface runoff and seepage generated by irrigated areas and coupled with the construction of artificial berms and impoundments, these drainage lines do form wetland areas where they flow into the Vaal River.

### **Biodiversity Conservation Areas:**

The Free State Province Biodiversity Management Plan (2015) has recently been published and has identified areas which are essential to meeting conservation targets for specific vegetation types, i.e. Critical Biodiversity Areas. The site in question is listed as being an Ecological Support Area (ESA) 1 and 2 as well as Degraded and Other (Appendix A: Map 2). Areas identified as ESA 1 and 2 are associated with the immediate catchment of the Vaal River and functions in support of this large watercourse. This functioning and support should therefore be retained as far as possible. Degraded areas are associated with areas transformed by agricultural

irrigation and centre-pivots. Those areas regarded as Other, indicate areas still consisting of natural vegetation but which area not regarded as being critical within the conservation plan. This would seem to indicate that, in general, the study area does not contain extensive areas of high conservation value.



### **Vegetation:**

According to Mucina & Rutherford (2006) the area consists of Kimberley Thornveld (SVK 4) and Highveld Alluvial Vegetation (Aza 5). The Kimberley Thornveld dominates the study area and covers all the terrestrial plains while the Highveld Alluvial Vegetation covers portions of the floodplain of the Vaal River. Both these vegetation types are currently listed as being of Least Concern (LC) under the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004) (Appendix A: Map 1). They are not currently subjected to any pronounced transformation pressures. Within the study area, both of these have been transformed to a significant extent by agricultural irrigation both in the terrestrial plains as well as the floodplain of the Vaal River.

### **Cultural and Heritage Environment:**

According to the Heritage Desktop Assessment conducted by Jaco van der Walt (HCAC) (Refer to Appendix ...) The scope of work comprises a heritage desktop report for a large area comprising approximately 3 955.70 ha. Due to the geographical size of the current prospecting right and the fact that the relatively small impact areas of the proposed mining right have not been confirmed as yet, it was deemed not feasible to conduct fieldwork at this point. Some heritage surveys (Rossouw 2006; Dreyer 2008; Tomose 2016; Van Vollenhoven 2018) were conducted in the greater area and this desktop study is informed by available data for the area. Based on these studies, resources such as archaeological resources, historical finds, cultural landscapes, burials and cemeteries can be expected in the study area. According to the Palaeontological Impact Assessment (Appendix ....) based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the loose sands of the Quaternary.

However, should artefacts archaeological items be observed during the mining activities, then all activity should cease immediately, the area marked off activity and a specialists consulted prior to any further activity. This also includes if any graves are observed on site during activity progress then all activity should have ceased and the area demarcated as a no-go zone.

### **Socio-Economic Environment:**

A Social and Labour Plan (SLP) was submitted as part of the MR application of the Applicant. The SLP forms the basis for the implementation of programmes and projects

as key activity drivers of the development and operation of the proposed mining activity in the Boshof area. It offers the building blocks for future economic development and growth of the local area. The scope of the document offers the Applicant a platform to engage in the development of the local economy and community through a basis of human resource development, economic delivery, business development and community participation. The nature of the document is therefore aimed at the widest possible comprehension and stimulation for inputs.

The SLP notes that the Applicant proposes to have approximately 90 employees (30 employees per site) who will support approximately 288 dependents. Due to the fact that most of the employees will reside within Christiana, it is fair to presume that the majority of monthly earned salaries will be spent in the local area. Indirectly, through the payment for services and suppliers the mine also supports employment of the procurement partners.

### **Existing Infrastructure:**

The infrastructure within the mining footprint include, but isn't limited to, the following:

- Fencing;
- Housing and supporting structures;
- Pivots;
- Power lines.
- Roads (public as well as private); and
- Water abstraction and storage infrastructure.

The proposed mining method is such that it can be moved away from build structures and existing infrastructure, thereby rendering the impact in this regard insignificant.

Approximately  $\pm 34\%$  of the mining right footprint remains to be prospected and/or mined by the Applicant when the already developed areas are excluded from the application footprint.

Should the mitigation measures and monitoring programmes proposed in this document be implemented on site, no fatal flaws could be identified that were deemed as severe as to prevent the activity continuing.

### **Land Use:**

The area earmarked for the proposed mining activity extends over eight (8) properties as listed earlier, within the magisterial district of Lejweleputswa, situated on the south-eastern bank of the Vaal River. The primary land use of the earmarked properties is agriculture including livestock- and/or game farming, crop production (centre-pivot irrigation), orchards, and dryland farming. The land use of some of the properties was also extended to include diamond mining

The applicant entered into a surface use agreement with the property owners when the prospecting right (FS30/5/1/1/2/449PR) was issued that bar mining in the cultivated areas (pivots and/or orchards) of the earmarked properties. Large portions of the earmarked properties were already developed for agricultural use. When these areas (developed agricultural areas) are excluded from the allowable mining footprint (in accordance with the surface use agreement) approximately  $\pm 34\%$  of the mining right footprint remains to be prospected and/or mined by the Applicant should a mining right be issued.

### **Environmental Management Programme (EMPR)**

The EMPR provides a description of the impact management outcomes and closure objectives. It presents the impacts to be mitigated in their respective phases as well as stipulates the mitigation measures to be applied on site.

The financial provision amount that will be necessary for the rehabilitation of the mining area, both at sudden closure during the normal operation of the project, and at final, planned closure is a sum total of R 1 312 107.97.

## LIST OF ACRONYMS

|        |   |
|--------|---|
| AIA    | Archaeological Impact Assessment  |
| ASTM   | American Society for Testing and Materials  |
| BID    | Background Information Document   |
| CARA   | Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)                       |
| CBA    | Critical Biodiversity Areas   |
| CLAA   | Criminal Law Amendment Act, 2013 (Act No. 37 of 2013)                                       |
| CRR    | Comments and Response Report  |
| DEDEAT | Department of Economic Development, Environmental Affairs and Tourism – Free State Province |
| DEIAR  | Draft Environmental Impact Assessment Report  |
| DMRE   | Department of Mineral Resources and Energy  |
| DoT    | Department of Transport   |
| DPW    | Department of Public Works  |
| DRDAR  | Department of Rural Development and Agrarian Reform   |
| DRDLR  | Department of Rural Development and Land Reform   |
| DSR    | Draft Scoping Report  |
| DWS    | Department of Water and Sanitation  |
| EA     | Environmental Authorisation   |
| EAP    | Environmental Assessment Practitioner   |
| EAR    | Environmental Audit Report  |
| FPBCMP | Free State Province Biodiversity Management Plan  |
| FEIAR  | Final Environmental Impact Assessment Report  |
| ECO    | Environmental Control Officer   |
| FSNEO  | Free State Nature and Environmental Ordinance, 1974 (No 19 of 1974)                         |
| EWA    | Ecological and Wetland Assessment   |
| EIA    | Environmental Impact Assessment   |
| EMP    | Environmental Management Plan   |
| EMPR   | Environmental Management Programme  |
| ESA    | Ecological Support Area   |
| FEIAR  | Final Environmental Impact Assessment Report  |
| FEPA   | Freshwater Ecosystem Priority Area  |
| FSR    | Final Scoping Report  |
| FP     | Financial Provision   |
| GDP    | Gross Domestic Product  |
| GNR    | Government Notice Number  |

|           |  |
|-----------|--|
| HBPA      | Harmful Business Practices Amendment Act, 1999 (Act No 23 of 1999)                   |
| HCAC      | Heritage Contracts and Archaeological Consulting                                     |
| HIA       | Heritage Impact Assessment   |
| I&AP      | Interested and Affected Party  |
| IAP       | Invasive Alien Plant   |
| IDP       | Integrated Development Plan  |
| IIP 84    | Invest in Property 84 (Pty) Ltd  |
| LED       | Local Economic Development   |
| LoM       | Life of Mine   |
| LN        | Listing Notice   |
| LUDS      | Land Use Decision Support  |
| MAR       | Mean Annual Runoff   |
| MHSA      | Mine Health and Safety Act, 1996 (Act No 29 of 1996)                                 |
| MPRDA     | Minerals and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)           |
| MR        | Mining Right   |
| MR Holder | Invest in Property (Pty) Ltd   |
| MRMR      | Mining Rock Mass Rating  |
| MSA       | Middle Stone Age   |
| MWP       | Mine Works Programme   |
| MAMSL     | Above mean seal-level  |
| NEM:AQA   | National Environmental Management: Air Quality Control Act, 2004 (Act No 39 of 2004) |
| NEM:BA    | National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004)        |
| NEM:WA    | National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)               |
| NEMA      | National Environmental Management Act, 1998 (Act No 107 of 1998)                     |
| NHRA      | National Heritage Resources Act, 1999 (Act No 25 of 1999)                            |
| NPAES     | National Protected Areas Expansion Strategy  |
| NRTA      | National Road Traffic Act, 1996 (Act No 25 of 1999)                                  |
| NWA       | National Water Act, 1998 (Act No 36 of 1998)   |
| OHSA      | Occupational Health and Safety Act, 1993 (Act No 85 of 1993)                         |
| P1        | Project Alternative 1  |
| PCB's     | Polychlorinated Biphenyls  |
| PCO       | Pest Control Officer   |
| PIA       | Palaeontological Impact Assessment   |
| PPE       | Personal Protection Equipment  |

|        |  |
|--------|--|
| PSM    | Palaeontological Sensitivity Map                                       |
| SL1    | Site Layout alternative 1  |
| SL2    | Site Layout alternative 2  |
| SAHRA  | South African Heritage Resources Agency                                |
| SAMBF  | South African Mining and Biodiversity Forum                            |
| SAMRAD | South African Mining Mineral Resources Administration System           |
| SANBI  | South African National Biodiversity Institute                          |
| SANRAL | South African National Roads Agency SOC Ltd                            |
| SANS   | South African National Standards                                       |
| SLP    | Social and Labour Plan   |
| SPLUMA | Spatial Planning and Land Use Management Act, 2013 (Act No 16 of 2013) |
| SWMP   | Stormwater Management Plan   |
| SubWMA | Sub Water Management Area  |
| TD1    | Technology/Design Alternatives Alternative 1                           |
| TD2    | Technology/Design Alternatives Alternative 1                           |
| USBM   | United States Bureau of Mine   |
| WMA    | Water Management Area  |
| WULA   | Water Use Licence Application  |
| ZAR    | Zuid-Afrikaanse Republic   |

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## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**And**

## **ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

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

|                                      |                                   |
|--------------------------------------|-----------------------------------|
| <b>NAME OF APPLICANT:</b>            | Invest in Property 84 (Pty) Ltd   |
| <b>TEL NO:</b>                       | 076 335 5332                      |
| <b>FAX NO:</b>                       | -                                 |
| <b>POSTAL ADDRESS:</b>               | 14 River Street, Christiana, 2680 |
| <b>PHYSICAL ADDRESS:</b>             | 14 River Street, Christiana,      |
| <b>FILE REFERENCE NUMBER SAMRAD:</b> | FS 30/5/1/2/2/10067 MR            |

## IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development act (Act 28 of 2002 as amended); the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorization can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulation, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

**It is therefore an instruction that** the prescribed reports required in respect of applications for an environmental authorization for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as failure to meet the requirements of the Regulation and will lead to the Environmental Authorization being refused.

**It is furthermore an instruction that** the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the Applicant.

## OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The objective of the environmental impact assessment process is to, through a consultative process-

- (a) determine the policy and legislative context within the activity is located and document how the proposed activity complies with and responds to the policy and legislative context,
- (b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location,
- (c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment,
- (d) determine the –
  - (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives, and
  - (ii) degree to which these impacts-
    - (aa) can be reversed;
    - (bb) may cause irreplaceable loss of resources, and
    - (cc) can be avoided, managed or mitigated;
- (e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- (f) identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity;
- (g) identify suitable measures to manage, avoid or mitigate identified impacts, and
- (h) identify residual risks that need to be managed and monitored.



## PART A

# SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

## 1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

### a) Details of Greenmined Environmental

In terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the environmental impact assessment (EIA) of any activities regulated in terms of the aforementioned Act. Invest in Property (Pty) Ltd (hereafter referred to as the “MR Holder”) appointed Greenmined Environmental (Pty) Ltd (hereafter referred to as “Greenmined”) to undertake the study needed. Greenmined has no vested interest in Invest in Property (Pty) Ltd or the proposed project and declares its independence as required by the EIA Regulations, 2014 (as amended 2017).

### i) Details of the EAP

Name of the Practitioner: Ms Sonette Smit  
Tel No: 021 851 2673 / 084 585 5706  
Fax No: 086 546 0579  
E-mail address: sonette.s@greenmined.co.za

### ii) Expertise of the EAP

#### (1) The qualifications of the EAP

(with evidence).

Mrs. S Smit has fourteen years of experience in environmental legal compliance audits, (GIS) geographic information system, mining right and permit applications and applications for environmental authorisations & Water use applications.. Please find full CV attached in Appendix O.

#### (2) Summary of the EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure)

Sonette Smit is an Environmental Consultant with 14 years' experience in the environmental sector. She specialized the last 8 years in the

mining sector where she conducted the mining related report and programs. She has also been involved in a number of other environmental and water use application projects where she compiled environmental management plans, environmental impact assessments, environmental audits, IWULA's/IWWMP's.

**b) Description of the property**

*Table 1: Description of the property.*

|  |   |
|--|---|
| <p><b>Farm Name:</b></p>   | <p><b><u>Whole farm of Van Aswegens Hoek 493:</u></b></p> <ul style="list-style-type: none"> <li>■ Portion 0 (Remaining Extent) of the farm Van Aswegens Hoek 493;</li> <li>■ Portion 1 (Remaining Extent) of the farm Van Aswegens Hoek 493;</li> <li>■ Portion 2 (Remaining Extent) of the farm Van Aswegens Hoek 493;</li> <li>■ Portion 4 of the farm Van Aswegens Hoek 493;</li> <li>■ Portion 6 of the farm Van Aswegens Hoek 493;</li> </ul> <p><b><u>Whole farm of Greylingslyn 355:</u></b></p> <ul style="list-style-type: none"> <li>■ Portion 0 (Remaining Extent) of the farm Greylingslyn 355;</li> <li>■ Portion 1 of the farm Greylingslyn 355;</li> <li>■ Portion 2 of the farm Greylingslyn 355;</li> </ul> |
| <p><b>Application area (Ha)</b></p>                                | <p>3 955.7022 ha</p>  |
| <p><b>Magisterial district:</b></p>                                | <p>Boshof</p>   |
| <p><b>Distance and direction from nearest town</b></p>             | <p>The application area is situated approximately 56 km north of Boshof, and ±53 km west of Hertzogville.</p>   |
| <p><b>21 digit Surveyor General Code for each farm portion</b></p> | <p><b><u>Van Aswegens Hoek 493:</u></b></p> <ol style="list-style-type: none"> <li>1. F0040000000049300000</li> <li>2. F0040000000049300001</li> <li>3. F0040000000049300002</li> <li>4. F0040000000049300004</li> <li>5. F0040000000049300006</li> </ol> <p><b><u>Greylingslyn 355:</u></b></p> <ol style="list-style-type: none"> <li>6. F0040000000035500000</li> <li>7. F0040000000035500001</li> <li>8. F0040000000035500002</li> </ol>  |

**c) Locality map**

(show nearest town, scale not smaller than 1:250000)

The requested map is attached as Appendix B.

**d) Description of the scope of the proposed overall activity**

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1:10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site

The Applicant, Invest in Property 84 (Pty) Ltd, applied for environmental authorisation to mine alluvial diamonds and gold from a 3 955.7022 ha area that extends over the properties as listed above within the Lejweleputswa magisterial district of the Free State Province.

Even though the project application extends over a vast area, the Applicant proposes to divide the mining right footprint (hereinafter referred to as the “major area”) into smaller mining areas of  $\pm 2$  ha each (hereinafter referred to as the “minor areas”) that will be positioned in between areas of agricultural importance. It is proposed that a maximum of three (3) minor areas will be mined at any given time. In other words the total footprint to be disturbed by mining activities at any given time calculates to  $\pm 6$  ha of the 3 955.7022 ha mining right area, upon which a mined-out minor area has to be rehabilitated prior to the opening of a subsequent minor area. The current project proposal will entail the disturbance of only 0.15% of the mining right area (major area) at any given time, as concurrent rehabilitation (strip-mining) is proposed.

The mine plan is to continue where the prospecting was halted starting on the farm Vanaswegenshoek excluding areas that was defined as no go areas as be the specialist studies.

Should the Applicant be issued with a mining right (MR) and the project commence, the principal mining activities is expected to include the following at each operational site (minor area):

- Site establishment;
- Stripping and stockpiling of topsoil of the mining area;
- Excavation and loading;
- Processing of gravel;
- Transport of concentrate to recovery plant;

- Backfilling of excavation;
- Rehabilitation of processing area;
- Sloping and landscaping upon closure of the site; and
- Replacing the topsoil and vegetating the disturbed areas.

Presently the preliminary layout of each operational site (minor area) is expected to include the following:

- Opencast excavation;
- Overburden stockpiles;
- Excavation and earthmoving equipment;
- Screens, conveyors and pans of the processing plant;
- Containers for administration, storage and workshop purposes;
- Mobile ablution facilities;
- Generators;
- Diesel depot (<80 m<sup>3</sup>);
- Water winning and storage equipment;
- Settling pond; and
- Internal roads.

Upon commencement, the proposed project will trigger listed activities (see Table below) in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations 2014 (as amended) and therefore requires an environmental impact assessment (EIA) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation.

See attached as Appendix C1 a copy of the preliminary site layout plan of the proposed mining activities.

**i) Listed and specified activities**

*Table 2: Listed and specified activities triggered by the proposed mining right application.*

| NAME OF ACTIVITY  | AERIAL EXTENT OF THE ACTIVITY | LISTED ACTIVITY                    | APPLICABLE LISTING NOTICE              |
|---|-------------------------------|------------------------------------|--|
| (E.g. For prospecting – drill site, site camp, ablution facilities, accommodation, equipment storage, sample storage, site office, access | Ha or m <sup>2</sup>          | Mark with an X where applicable or | (GNR 324, GNR 325, GNR 326 OR GNR 327) |

| NAME OF ACTIVITY   | AERIAL EXTENT OF THE ACTIVITY | LISTED ACTIVITY affected | APPLICABLE LISTING NOTICE  |
|--|-------------------------------|--------------------------|--|
| <p>route etc... etc... etc</p> <p>E.g. for mining – excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>   | 3 955.7022 ha                 | X                        | GNR 325 LN 2 Activity 15, 17<br>GNR 327 LN 1 Activity 24, 28, 56 |
| <p>GNR 325 Listing Notice 2 Activity 15:</p> <p><i>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-</i></p> <p><i>(i) the undertaking of a linear activity; or</i></p> <p><i>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</i></p>  |                               |                          |  |
| <p>GNR 325 Listing Notice 2 Activity 17:</p> <p><i>Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—</i></p> <p><i>(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or</i></p> <p><i>(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</i></p> <p><i>but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</i></p> |                               |                          |  |
| <p>GNR 327 Listing Notice 1 Activity 24:</p> <p><i>The development of a road—</i></p> <p><i>(i) [a road] for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or</i></p> <p><i>(ii) [a road] with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</i></p> <p><i>but excluding a road—</i></p> <p><i>(a) [roads] which [are] is identified and included in activity 27 in Listing Notice 2 of 2014;</i></p> <p><i>(b) [roads] where the entire road falls within an urban area; or</i></p> <p><i>c) which is 1 kilometre or shorter.</i></p>  |                               |                          |  |
| <p>GNR 327 Listing Notice 1 Activity 28:</p> <p><i>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</i></p> <p><i>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</i></p>   |                               |                          |  |

| NAME OF ACTIVITY   | AERIAL EXTENT OF THE ACTIVITY                     | LISTED ACTIVITY | APPLICABLE LISTING NOTICE  |
|--|---|-----------------|--|
| <i>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</i>  |   |                 |  |
| <p>GNR 327 Listing Notice 1 Activity 56</p> <p><i>The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre—</i></p> <p><i>(i) where the existing reserve is wider than 13,5 meters; or</i></p> <p><i>(ii) where no reserve exists, where the existing road is wider than 8 metres;</i></p> <p><i>excluding where widening or lengthening occur inside urban areas.</i></p>  |   |                 |  |
| Demarcation of the mining area with visible beacons.   | ±2 ha/minor area (6 ha maximum at any given time) | N/A             | Not listed   |
| Site establishment   | ±2 ha/minor area (6 ha maximum at any given time) | N/A             | Not listed   |
| Stripping and stockpiling of topsoil of each mining block.   | ±2 ha/minor area (6 ha maximum at any given time) | X               | GNR 325 LN 2 Activity 15<br>GNR 325 LN 2 Activity 17<br>GNR 327 LN 1 Activity 28 |
| <p>GNR 325 Listing Notice 2 Activity 15:</p> <p><i>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-</i></p> <p><i>(i) the undertaking of a linear activity; or</i></p> <p><i>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</i></p>  |   |                 |  |
| <p>GNR 325 Listing Notice 2 Activity 17:</p> <p><i>Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—</i></p> <p><i>(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or</i></p> <p><i>(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</i></p> <p><i>but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</i></p> |   |                 |  |
| <p>GNR 327 Listing Notice 1 Activity 28:</p> <p><i>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</i></p> <p><i>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</i></p> <p><i>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</i></p>  |   |                 |  |
| Excavation and loading.  | ±900 m <sup>2</sup> /minor area                   | X               | GNR 325 LN 2 Activity 17<br>GNR 327 LN 1 Activity 28                             |

| NAME OF ACTIVITY   | AERIAL EXTENT OF THE ACTIVITY                         | LISTED ACTIVITY | APPLICABLE LISTING NOTICE  |
|--|---|-----------------|--|
|  | (±5.4 ha)   |                 |  |
| <p>GNR 325 Listing Notice 2 Activity 17:</p> <p><i>Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—</i></p> <p><i>(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or</i></p> <p><i>(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</i></p> <p><i>but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</i></p> |   |                 |  |
| <p>GNR 327 Listing Notice 1 Activity 28:</p> <p><i>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</i></p> <p><i>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</i></p> <p><i>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</i></p>  |   |                 |  |
| Processing of gravel   | ±1 ha/minor area<br>(±6 ha)                           | X               | GNR 325 LN 2 Activity 17<br>GNR 327 LN 1 Activity 28                             |
| <p>GNR 325 Listing Notice 2 Activity 17:</p> <p><i>Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—</i></p> <p><i>(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or</i></p> <p><i>(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</i></p> <p><i>but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</i></p> |   |                 |  |
| <p>GNR 327 Listing Notice 1 Activity 28:</p> <p><i>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</i></p> <p><i>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</i></p> <p><i>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</i></p>  |   |                 |  |
| Transport of concentrate to recovery plant   | Use of existing access roads upgraded where necessary | X               | GNR 325 LN 2 Activity 17<br>GNR 327 LN 1 Activity 24<br>GNR 327 LN 1 Activity 56 |
| <p>GNR 325 Listing Notice 2 Activity 17:</p> <p><i>Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—</i></p>   |   |                 |  |

| NAME OF ACTIVITY   | AERIAL EXTENT OF THE ACTIVITY                             | LISTED ACTIVITY | APPLICABLE LISTING NOTICE |
|--|---|-----------------|---------------------------|
| <p>(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or<br/>                     (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;<br/>                     but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</p>   |   |                 |                           |
| <p>GNR 327 Listing Notice 1 Activity 24:<br/>                     The development of a road—<br/>                     (i) [a road] for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or<br/>                     (ii) [a road] with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;<br/>                     but excluding a road—<br/>                     (a) [roads] which [are] is identified and included in activity 27 in Listing Notice 2 of 2014;<br/>                     (b) [roads] where the entire road falls within an urban area; or<br/>                     c) which is 1 kilometre or shorter.</p> |   |                 |                           |
| <p>GNR 327 Listing Notice 1 Activity 56<br/>                     The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre—<br/>                     (i) where the existing reserve is wider than 13,5 meters; or<br/>                     (ii) where no reserve exists, where the existing road is wider than 8 metres;<br/>                     excluding where widening or lengthening occur inside urban areas.</p>  |   |                 |                           |
| Backfilling of excavation  | ±900 m <sup>2</sup> /site                                 | X               | N/A                       |
| Rehabilitation of processing area  | ±1 ha/minor area (±6 ha)                                  | X               | N/A                       |
| Sloping and landscaping upon closure of the site   | ±2 ha/minor (6 ha maximum 6 ha maximum at any given time) | X               | N/A                       |
| Replacing the topsoil upon closure of a mined-out strip.   | ±0.25 ha/strip  | X               | N/A                       |
|  |   |                 |                           |



## ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be mined and for a linear activity, a description of the route of the activity)

## 1. BACKGROUND INFORMATION

*(Refer to Appendix F: Existing Prospecting right)*

The Applicant, Invest in Property 84 (Pty) Ltd, previously held a prospecting right (FS 30/5/1/1/2/449 PR) over the proposed mining right application area. Owing to the prospecting outcome up until now, the Applicant applied for a mining right for the winning of alluvial diamonds and gold.

Should the MR be issued and the mining of alluvial diamonds and gold be allowed, the proposed project will comprise of activities that can be divided into three key phases (discussed in more detail below) namely the:

(1) Site establishment/construction phase which will involve the demarcation of each minor area's boundaries and required buffer no-go zones pertaining to existing infrastructure and areas of significant importance (such as but not limited to watercourse, wetlands, Ecological Support Areas (ESA)) identified during the environmental impact assessment. Site establishment will further necessitate the clearing of vegetation, stripping and stockpiling of topsoil, and establishing site infrastructure.

(2) Operational phase that is presently expected to entail the simultaneous mining of three (3) minor mining areas within the footprint of the major mining right area. The estimated footprint of a single minor area is proposed to be  $\pm 2$  ha, meaning that the footprint of the operational areas will calculate to a maximum of  $\pm 6$  ha at any given time (should all three minor areas be operating). The mining method to be implemented at each minor area will resemble the current prospecting invasive activities. Upon the prospecting and exploration of allowable (agreed to by the landowner) farm portions, the opencast and strip-mining method will be used to recover diamond bearing gravel that will be processed, upon which the concentrated product is transported to an off-site recovery plant.

(3) Decommissioning phase which will include activities that can be divided into medium- and long term categories. In the medium term, rehabilitation will entail the continuous reinstatement of mined-out minor areas through the use of overburden and spoil material to backfill excavation pits,

reinstatement of decommissioned processing areas, rehabilitation of settling ponds as well restoring eroded areas and the management of weeds and invasive plant species. In the long term, rehabilitation will comprise the reinstatement of all remaining disturbed areas (mining related) prior to the submission of a closure application to the Department of Mineral Resources and Energy (DMRE). The right holder will further be responsible for the seeding of all rehabilitated areas. Once the full mining area is rehabilitated, the mining right holder will be required to submit a closure application to the DMRE in accordance with section 43(4) of the MPRDA, 2002. The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Gazette No. 39425: 1147, and amended by Government Gazette No. 42956:

As mentioned earlier, should the project be authorised the layout of the mining area (minor area) is expected to consist of the following:

- Opencast excavation;
- Overburden stockpiles;
- Excavation and earthmoving equipment;
- Screens, conveyors and pans of the processing plant;
- Containers for administration, storage and workshop purposes;
- Mobile ablution facilities;
- Generators;
- Diesel depot (<80 m<sup>3</sup>);
- Water winning and storage equipment;
- Settling pond; and
- Internal roads.

The table below lists the GPS coordinates of the approved mining footprint (5.2149 ha).

*Table 3: GPS coordinates of the approved mining right area.*

| NUMBER | DEGREES, MINUTES, SECONDS |               | DECIMAL DEGREES |             |
|--------|---------------------------|---------------|-----------------|-------------|
|        | LAT (S)                   | LONG (E)      | LAT (S)         | LONG (E)    |
| 0      | 27°58'28.24"S,            | 25°,6'4.79"E  | -27.974510°S    | 25.101330°E |
| 1      | 27°58'7.46"S,             | 25°,6'46.01"E | -27.968740°S    | 25.112781°E |
| 2      | 27°57'36.40"S,            | 25°,7'4.12"E  | -27.960110°S    | 25.117810°E |

| NUMBER | DEGREES, MINUTES, SECONDS |               | DECIMAL DEGREES |             |
|--------|---------------------------|---------------|-----------------|-------------|
|        | LAT (S)                   | LONG (E)      | LAT (S)         | LONG (E)    |
| 3      | 27°57'15.34"S,            | 25°,7'27.62"E | -27.954260°S    | 25.124340°E |
| 4      | 27°56'55.50"S,            | 25°,7'55.20"E | -27.948750°S    | 25.132000°E |
| 5      | 27°56'5.71"S,             | 25°,7'56.57"E | -27.934920°S    | 25.132380°E |
| 6      | 27°55'48.65"S,            | 25°,7'51.78"E | -27.930180°S    | 25.131050°E |
| 7      | 27°55'38.28"S,            | 25°,7'55.24"E | -27.927300°S    | 25.132010°E |
| 8      | 27°59'3.16"S,             | 25°12'26.28"E | -27.984210°S    | 25.207300°E |
| 9      | 28°,0'12.46"S,            | 25°11'22.02"E | -28.003460°S    | 25.189450°E |
| 10     | 28°,0'35.96"S,            | 25°11'25.55"E | -28.009990°S    | 25.190430°E |

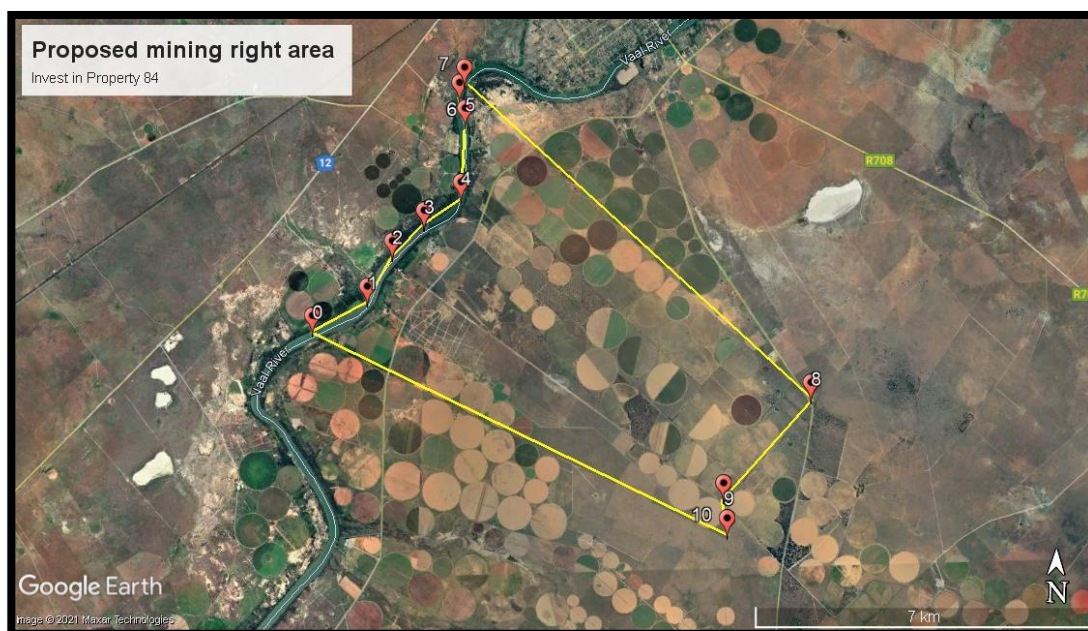


Figure 1: Satellite view showing the location of the MR area (yellow polygon) in relation to the surrounding landscape. (Image obtained from Google Earth).

**PHASES OF THE PROJECT**

**1.1 CONSTRUCTION PHASE**

Upon the identification of allowable mining areas (in accordance with the surface use agreement with landowners), site establishment entails the demarcation of mining boundaries, clearance of vegetation (where necessary), and stripping and stockpiling of topsoil to establish mining related infrastructure, stockpile areas and the excavation zone as detailed below:

### ■ **Demarcation of Mining Boundaries:**

Pursuant to receipt of an Environmental Authorisation (EA) and Mining Right (MR), and prior to site establishment, the boundary of the mining area has to be demarcated. However, because of the vast size of the mining right footprint (3 955.7022 ha), the installation of beacons along the outer mining boundaries is deemed impractical. The Applicant therefore proposes to demarcate each operational minor area ( $\pm 2$  ha) as well as all specific areas of concern within, or within close proximity (100 m) to an operational minor area. Areas to be demarcated will include, but not be limited to, all “no-go” buffer zones identified during the EIA process, stockpile areas, excavations, processing areas, water storage and settling ponds.

### ■ **Clearing of Vegetation:**

According to Mucina & Rutherford (2006) the area consists of Kimberley Thornveld (SVk 4) and Highveld Alluvial Vegetation (Aza 5). The Kimberley Thornveld dominates the study area and covers all the terrestrial plains while the Highveld Alluvial Vegetation covers portions of the floodplain of the Vaal River. Both these vegetation types are currently listed as being of Least Concern (LC) under the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004). They are not currently subjected to any pronounced transformation pressures. Within the study area, both of these have been transformed to a significant extent by agricultural irrigation both in the terrestrial plains as well as the floodplain of the Vaal River.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the study area contains numerous protected species. These consist of protected trees, succulents and geophytes. The following recommendations should be followed for protected species:

- Where protected tree species (*Vachellia erioloba* – Camel Thorn) occur in mining areas they should be avoided as far as possible.
- Where this is not possible, permits should be obtained from the

relevant authority to remove them. These trees should be replaced during rehabilitation by saplings sourced from seed in the study area.

- Saplings should be cultivated in a small nursery area established on the site. This should also be established/overseen by a suitably qualified person.
- Saplings may require protection and watering during the initial establishment phase.
- The success of establishment should also be continuously monitored.
- Where protected succulent/geophytic species will be affected by mining, permits should be obtained and these transplanted to adjacent or rehabilitated areas where they will remain unaffected.
- These species are cryptic and inconspicuous and it is recommended that a walkthrough survey be conducted prior to an area being mined. This should include identification and marking of all protected plants in such an area and should be performed by an ecologist or botanist.
- The transplanting of these species should be overseen by an ecologist, botanist or other suitably qualified person.
- Monitoring of the success of establishment should also be undertaken.

#### ■ **Topsoil Stripping:**

It is proposed that topsoil removal will be restricted to the exact footprint of each minor area to be mined during the operational phase of the activity. The topsoil will be stockpiled at a designated signposted area within the boundary of each minor area to be replaced during the rehabilitation of the area. It will be part of the obligations of site management to prevent the mixing of topsoil heaps with overburden/other soil heaps. The complete A-horizon (the top 100 – 200 mm of soil which is generally darker coloured due to high organic matter content) will be removed. If it is unclear where the topsoil layer ends the top 300 mm of soil will be stripped. The topsoil berm will measure a maximum of 1.5 m in height in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.

### ■ Access Roads:

Presently it is proposed that access to the properties will be from the existing R708 and associated public roads branching from it. Within the mining boundary (major area), the Applicant will strive to make use of the existing farm roads as far as possible, however some new roads, or upgrading of existing roads will be required. Haul roads will be extended between the excavations and processing area within each minor area, and will be rehabilitated as part of the reinstatement of the footprint area (minor area).

It is proposed that should the Applicant implement the mitigation measures proposed in the EMPr the impact of the new roads, or upgrading of existing roads in general is deemed to be of low significance.

### ■ Establishment of Site Infrastructure:

The proposed site infrastructure to be established within the footprint of each minor area is expected to consist of:

- Screens, conveyors and pans of the processing plant;
- Containers for administration, storage and workshop purposes;
- Mobile ablution facilities;
- Generators;
- Diesel depot (<80 m<sup>3</sup>);
- Water winning and storage equipment;
- Settling pond; and
- Internal roads.

## 1.2 OPERATIONAL PHASE

The mining method to be used, will resemble the prospecting invasive activities implemented by the Applicant, as part of the approved prospecting right. Upon the prospecting and exploration of allowable (as agreed to in terms of the surface use agreement with landowners) farm portions to determine the precise location and direction of the channels to be mined, the opencast and strip-mining method will be implemented to recover the alluvial diamond bearing gravel of the footprint area (minor area). After the removal of topsoil, excavators will open pits of ±350 m<sup>2</sup> that will vary in depth from 300 mm – 1.2 m depending on the presence of the diamondiferous gravel. The

diamondiferous gravel will then be excavated and transported to the processing area where it will be fed into a scrubber and sizing screen. Excess sand will be removed, and the product will continue from the material conveyor to a stockpile, from where it will be fed into the washing pans. The concentrated product from the pans will be extracted into steel containers that will be loaded onto a truck and transported to an off-site recovery plant. The paddle from the washing pans will be pumped into the settling pond where excess water is allowed to evaporate. Oversized rock, sand and tailings will be used to refill the excavation and landscape the disturbed area (minor area) prior to the replacement of the previously stockpiled topsoil.

Should gold fines (placer deposits) be found at the recovery plant during the sorting process of the diamond concentrated, the Applicant will sell the mineral in accordance with relevant legislation. No additional activities/process will be required to win/extract gold from the proposed mining right area.

As mentioned earlier, it is proposed that three (3) minor areas will be operated simultaneously within the footprint of the mining right area (major area). The estimated footprint of a minor area will be  $\pm 2$  ha, meaning that the unrehabilitated mining areas will calculate to  $\pm 6$  ha (0.15% of the mining right area) at any given time.

The mine plan is to continue where the prospecting was halted starting on the farm Portion 0 (Remaining Extent) of the farm Van Aswegens Hoek 493 excluding areas that was defined as no go areas as be the specialist studies.







*Figure 1: Images showing the three different +/-2ha that will be mined simultaneously*

The Applicant requested the mining right to be valid for a period of 30 years based on the vast size of the application area and the nature of the proposed activity being dependant on the presence and detection of diamondiferous gravel. The variability of alluvial diamond deposits in turn necessitate prospecting to precede mining activities, adding to the timeframe required to successfully exploit the resource present within the study area. In light of these technicalities, and the fact that diamondiferous gravel requires constant pursuing, the Applicant expects the proposed project to extend over a 30-year period.

As mentioned earlier, currently the mining activities at each minor area are expected to entail the following:

- ◆ Site establishment;
- ◆ Stripping and stockpiling of topsoil of the mining area;
- ◆ Excavation and loading;
- ◆ Processing of gravel;
- ◆ Transport of concentrate to recovery plant;
- ◆ Backfilling of excavation;
- ◆ Rehabilitation of processing area;
- ◆ Sloping and landscaping upon closure of the site; and  
Replacing the topsoil and vegetating the disturbed areas.

### 1.2.1 Operating Hours

The mining activities will be limited to normal working hours from Monday to Friday (07:30 to 17:00) and once a month on a Saturday with normal tea and lunch times.

Should any mining related activities extend beyond the stipulated operating hours, site management will inform the DMRE and I&AP's in writing prior to the implementing of the extended workhours

### **1.2.2 Mining plan**

### **1.2.3 Water use**

Water for processing purposes will be extracted from the Vaal River upon approval received from the Department of Water and Sanitation. Potable water will be obtained from existing boreholes on the farms in accordance with landowner approval. A water use application to Department of Water and Sanitation is currently underway.

### **1.2.4 Waste management**

Solid waste, generated during the operational phase, will be contained in a sealable refuse bin to be placed at the processing area until it is transported to the designated landfill site. A recognized contractor will service the chemical toilet that will serve as ablution facility to the employees. Due to the nature of the project very little generation of hazardous waste is expected, and will mainly be the result of accidental spillages or breakdowns. Such contaminated areas will be cleaned up immediately (within two hours of the occurrence) and contaminated soil will be contained in designated hazardous waste containers to be removed daily to the off-site workshop where it will be incorporated into the existing waste disposal system.

### **1.2.5 Servicing and Maintenance**

When needed, mining equipment will be serviced at the workshop on the site. If emergency repairs are needed on equipment not able to move to the workshop, drip trays will be used under the machinery and all waste will be contained and removed from the

emergency service area to the workshop to ensure proper disposal. The mining site does require the storage of diesel (tanks (<80 m<sup>3</sup>)) and fuelling of the mining related equipment/vehicles is done at the workshop.

### 1.2.6 Electricity

The proposed project will not require any additional electricity connections, as power existing power connection is in place and will be supported, when needed, by generators

## 1.3 DECOMMISSIONING PHASE

Rehabilitation will include activities to be divided into medium- and long term categories. In the medium term, rehabilitation will entail the continuous reinstatement of mined-out minor areas through the use of overburden and spoil material to backfill excavation pits, reinstatement of decommissioned processing areas, rehabilitation of settling ponds as well restoring eroded areas and the management of weeds and invasive plant species. In the long term, rehabilitation will comprise the reinstatement of all remaining disturbed areas (mining related) prior to the submission of a closure application to the Department of Mineral Resources and Energy (DMRE).

The future land use of the rehabilitated mining footprint will be agriculture. Upon the replacement of the topsoil, the area around and inside the excavation will once again be available for grazing purposes, and the planting of the cover crop (to protect the topsoil) will tie in with the proposed land use.

The MR Holder will comply with the minimum closure objectives as prescribed by the DMRE and detailed below:

### **Rehabilitation of the excavated area:**

The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material removed from the excavation must be dumped into the excavation.

No waste may be permitted to be deposited in the excavations.

Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.

Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.

The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

**Rehabilitation of plant/processing area:**

Coarse natural material used during the process must be removed and dumped into the excavations.

Stockpiles must be removed during the decommissioning phase, the area ripped and the topsoil returned to its original depth to provide a growth medium.

On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002):

- Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.

Photographs of the camp and office sites, before and during the mining operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the DMRE Regional Manager.

On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200 mm and graded to an even surface condition. Where applicable/possible topsoil needs to be returned to its original depth over the area.

Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.

The area shall then be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the DMRE Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a seed mix to his or her specification.

#### **Final rehabilitation:**

Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and invasive plant species clearing.

All mining equipment, and other items used during the mining period must be removed from the site (section 44 of the MPRDA).

Waste material of any description, including receptacles, scrap, rubble and tyres, must be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.

The management of invasive plant species must be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site.

Final rehabilitation shall be completed within a period specified by the Regional Manager.

Once the full mining area was rehabilitated the mining right holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *“An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report”*. The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998.

Also refer to Part B(1)(d)(i) *Determination of closure objectives* and Appendix M for the Closure Plan.

## e) Policy and Legislative Context

Table 4: Policy and legislative context.

| APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT   | REFERENCE WHERE APPLIED                                    | HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT |
|--|--|---|
| (A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, | (i.e. Where in this document has it been explained how the | (E.g. in terms of the National Water Act: Water use license has/has not been            |

| <p><b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b></p>   | <p><b>REFERENCE WHERE APPLIED</b></p>  | <p><b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT</b></p> |
|--|--|---|
| <p>spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);</p>  | <p>development complies with and responds to the legislation and policy context)</p>   | <p>applied for).</p>  |
| <p>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).</p> <p>Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970).</p>  | <p>Part A(1)(g)(iv)(1)(b) Description of the current land uses.</p> <p>Part A(iv)(1)(viii) The possible mitigation measures that could be applied on the level of risk – <i>Management of Invasive Plant Species</i>.</p>  | <p>The mitigation measures proposed for the site includes specifications of the CARA, 1983.</p>       |
| <p>Free State Nature and Environmental Ordinance 8 of 1996 (as amended).</p>   | <p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity - <i>Biological Environment</i></p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – <i>Mining, Biodiversity Conservation Area, and Vegetation</i>.</p> | <p>The mitigation measures proposed for the site includes specifications of the ECNEO, 1974.</p>      |
| <p>Guideline on Need and Desirability</p>  | <p>Part A(1)(f) Need and desirability of the proposed activities.</p>  | <p>The need and desirability of the project was assessed in accordance with these guidelines.</p>     |
| <p>Mine Health and Safety Act, 1996 (Act No 29 of 1996) read together with applicable amendments and regulations thereto including relevant OHSA regulations.</p>  | <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – <i>Management of Health and Safety Risks</i>.</p>  | <p>The mitigation measures proposed for the site includes specifications of the MHSA, 1996.</p>       |
| <p>Mineral and Petroleum Resources Development Act, 2002, (Act No. 28 of 2002) read together with applicable amendments and regulations thereto.</p>   | <p>Part A(1)(d) Description of the scope of the proposed overall activity.</p>   | <p>Application for a mining right. Reference number: FS30/5/1/2/2/10067 MR</p>                        |
| <p>National Environmental Management Act,1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended by GNR 326 effective 7 April 2017):</p> <ul style="list-style-type: none"> <li>◆ GNR 325 Listing Notice 2 Activity 15</li> <li>◆ GNR 325 Listing Notice 2 Activity 17</li> </ul> | <p>Part A1(d)(i) Listing and specified activities.</p>   | <p>Application for environmental authorisation. Reference number: FS30/5/1/2/2/10067MR</p>            |

| APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT   | REFERENCE WHERE APPLIED   | HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT   |
|--|---|---|
| <ul style="list-style-type: none"> <li>◆ GNR 327 Listing Notice 1 Activity 24</li> <li>◆ GNR 327 Listing Notice 1 Activity 28</li> <li>◆ GNR 327 Listing Notice 1 Activity 56</li> </ul>   |   |   |
| <p>National Environmental Management: Air Quality Control Act, 39 (Act No 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827</p>              | <p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – <i>Air Quality and Noise Ambiance.</i></p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – <i>Air Quality and Noise Ambiance.</i></p>               | <p>The mitigation measures proposed for the site take into account the NEM:AQA, 2004 and the National Dust Control Regulations.</p>             |
| <p>National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.</p>  | <p>Part A1(g)(iv)(1)(a) Type of environment affected by the proposed activity - <i>Biological Environment</i></p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – <i>Mining, Biodiversity Conservation Areas, and Vegetation.</i></p> | <p>Assessment of biophysical environment.</p> <p>The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004.</p> |
| <p>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) read together with applicable amendments and regulations thereto.</p> <p>NEM:WA, 2008: National norms and standards for the storage of waste (GN 9260).</p> | <p>Part A(ii) Description of the activities to be undertaken: <i>1.2.3 Waste Management Programme &amp; 2.3.5 Waste Management</i></p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – <i>Waste Management.</i></p>                   | <p>The mitigation measures proposed for the site take into account the NEM:WA, 2008.</p>  |
| <p>National Heritage Resources Act No 25 of 1999.</p>  | <p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – <i>Human Environment.</i></p> <p>Part A(1)(g)(viii) The possible mitigation</p>   | <p>The mitigation measures proposed for the site includes specifications of the NHRA, 1999.</p>   |



| APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT  | REFERENCE WHERE APPLIED   | HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT  |
|---|---|--|
|   | measures that could be applied on the level of risk – <i>Cultural and Heritage Environment</i> .  |  |
| National Road Traffic Act, 1996 (Act No. 93 of 1996)  | Part A(ii) Description of the activities to be undertaken: 2.2.5 <i>Access Roads</i> .<br><br>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – <i>Existing Infrastructure</i> . | The mitigation measures proposed for the project take into account the NRTA, 1996.   |
| National Water Act, 1998 (Act No. 36 of 1998) read together with applicable amendments and regulations thereto.<br><br>Department of Water Affairs and Forestry Best Practice Guideline Series (2007).  | Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – <i>Hydrology and Geohydrology</i> .<br><br>Part B(1)(d)(viii) Has a water use licence been applied for?  | A water use licence application will be submitted to the Department of Water and Sanitation in terms the National Water Act, 1998 (Act No. 36 of 1998).                    |
| Precious Metals Act, 2005 (Act No. 37 of 2005) read together with applicable amendments and regulations thereto.  | .Part A(1)(d)(ii)(1.2) Operational phase  | Selling of gold will be in accordance with this act  |
| Public Participation Guideline in terms of the NEMA EIA Regulations.  | Part A(1)(g)(ii) Details of the Public Participation Process Followed   | Public participation was conducted in accordance with the public participation guidelines.   |
| The South African Constitution.   | Implied throughout the document.  | To be upheld throughout the EIA assessment, planning-, construction-, operational- and decommissioning phases.   |
| Section 28 of the NEMA, 1998 which states that “ <i>Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.</i> ” | Implied throughout the document   | The “ <i>general duty of care towards the environment</i> ” to be upheld throughout the EIA assessment, planning-, construction-, operational- and decommissioning phases. |

| APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT | REFERENCE WHERE APPLIED | HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT |
|--|-------------------------|---|
|  |                         |   |

**f) Need and desirability of the proposed activities.**

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

Agriculture and mining are the leading form of income and employment along the south, south-western and western reaches of the Free State Province, extending into the Northern Cape Province. Moreover, the prospecting/mining of alluvial diamonds along the banks of the Vaal River has shown renewed fervour since 1997. The Applicant, Invest in Property 84 (Pty) Ltd, previously held a prospecting right (FS30/5/1/1/2/449PR) over eight properties along the south-eastern bank of the Vaal River within the Lejweleputswa magisterial district, and applied for a mining right for the winning of diamonds (alluvial) and gold (placer deposits) over a matching footprint.

The prospecting results (to date) have shown that the prospecting area has a high potential to yield diamondiferous gravel. Prospecting has however also shown that the presence of diamondiferous gravel is highly variable and cannot be projected based on the amount of prospecting done to date. The Applicant therefore desires the proposed mining right to incorporate the entire prospecting right area as this will allow additional time for prospecting and mining of the resource within the remaining footprint. The primary goal of the proposed mining operation will be the winning of alluvial diamonds. However, since the presence of gold fines, within the diamondiferous gravel, was established the Applicant included gold as a commodity to the mining right application. Should the recovery plant procure gold fines (placer deposits) while sorting the diamond concentrated, the Applicant will sell the mineral in accordance with relevant legislation. No additional activities/process will be required to win/extract gold from the proposed mining right area. Gold finds will be exclusively reliant on the presence of diamondiferous gravel, is expected to be capricious, and will therefore be treated as a derivative with the presence/absence thereof not affecting the feasibility of the proposed project.

The proposed labour component of the operation is approximately 30 employees per minor area including management. This calculates to approximately 90 employees to be employed should three minor areas operate simultaneously. In terms of the Social and Labour Plan to be approved as part of the proposed mining right application, the Applicant has an obligation to contribute to Human Resource Development and Local Economic Development (LED).

The primary objective of the Human Resource Development and Social Programme is to focus on strategic development initiatives, within pockets of the workforce, rather than a blanket training initiative for all employees. The objectives of the skills development plans are as follows:

- Ensure that selected employees have the ongoing skills required for successful continuation of the mining operations (workplace skills).
- To implement plans to ensure succession of management and career development is achieved through the identification of talent and development of the identified talent.
- Develop plans to provide all employees with both life skills and portable skills that they may need either upon closure of the mine or should they choose to leave the employment of the mine.
- Provide ABET training to ensure all employees have the opportunity to obtain an education level of at least ABET 4.

It is proposed that the 90 employees will support approximately 288 dependents, taking into account that each household contains an average of 3.2 persons. Due to the fact that most of the employees reside within the Tokologo Local Municipality, it is fair to presume that the majority of monthly earned salaries will be spent in the local area. Indirectly, through the payment for services and suppliers the mine will also support employment of the procurement partners. In addition thereto, the operation will contribute to the local economy of the area through the implementation of a Local Economic Development project identified by and agreed with the Tokologo Local Municipality.

As mentioned earlier, the Applicant entered into a surface use agreement with the property owners when the prospecting right (FS30/5/1/1/2/449PR) was issued. In terms of the said agreement, the Applicant must (amongst others) take the farming activities into account and prospecting operations is not allowed to affect the rights of the landowner to conduct its farming and business activities on

the property. The Applicant also agreed to use the access roads as agreed with the landowner from time to time. The agreement furthermore restricts the prospecting of any part of the property used for cultivation, by the irrigation pivots and/or orchards unless the landowner has granted written permission to the right holder.

Should the mining right be issued, the Applicant committed to renew the said surface use agreement with every property owner, honouring the commitment to mine only in areas as agreed with the landowner that does not extend over pivots or orchards or impede farming/business activities. In light of this arrangement, the project proposal allows for the combined land use (agriculture and mining) of the earmarked properties as mining will take place in between the agricultural active areas (pivots, orchards etc.) even though this reduces the available mining area to  $\pm 34\%$  of the 3 955.7022 ha application area. Should the MR application be approved it will allow property owners the opportunity of supplementing and diversifying their property's income through compensation paid to them by the Applicant.

#### **NEED AND DESIRABILITY:**

The need and desirability of the proposed mining operation was assessed in terms of the National Department of Environmental Affairs' Guideline on Need and Desirability (first version published in terms of section 24J of the NEMA in 2014, and second version in 2017)). The following table shows the questions that were considered in this regard.

Table 5: Need and desirability determination.

| 1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES  |   |                       |
|--|---|-----------------------|
| How will this development impact on the ecological integrity of the area?  |   |                       |
| Question   | Response  | Level of Desirability |
| How were ecological integrity considerations taken into account?   | Ecological integrity refers the integrity or condition of the ecosystem and ecological processes. The current ecological integrity of the study area was estimated by comparing the reference or pristine condition against the current impacts affecting it. Since alluvial diamond mining is done by removing the vegetation layer and excavating the underlying soils and gravel this results in an extensive degradation of the ecological integrity of an area. The current ecological integrity is then compared to the anticipated ecological integrity  | Desirable             |
| How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? | Alluvial diamond mining removes the vegetation layer and underlying soils and gravel which in turn leads to the extensive loss of ecosystem function, habitat and diversity. Where mining occurs in natural areas the impact would therefore be high.   | Desirable             |
| How will this development pollute and/or degrade the biophysical environment?  | The biophysical environment refers to the physical environment which drives an ecosystem, i.e. soil, geology, climate, etc. Since alluvial diamond mining requires the excavation of large volumes of soil and underlying gravel, it leads to the transformation of the biophysical environment of the natural ecosystem which in turn results in high impacts.   | Desirable             |
| What waste will be generated by this development?  | As mentioned in Part A(1)(ii)(1.2.4) solid waste, generated during the operational phase, will be contained in a sealable refuse bin to be placed at the processing area until it is transported to the designated landfill site. A recognized contractor will service the chemical toilet that will serve as ablution facility to the employees. Due to the nature of the project very little generation of hazardous waste is expected, and will mainly be the result of accidental spillages or breakdowns. Such contaminated areas will be cleaned up immediately (within two hours of the occurrence) and contaminated soil will be contained in designated hazardous waste containers to be removed daily to the off-site workshop where it will be incorporated into the existing waste disposal system. | Highly Desirable      |
| How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage?     | According to the Heritage Desktop Assessment conducted by Jaco van der Walt (HCAC) (Refer to Appendix I1) The scope of work comprises a heritage desktop report for a large area comprising approximately 3 955.70 ha. Due to the geographical size of the current prospecting right and the fact that the relatively small impact areas of the proposed mining right have not been confirmed as yet, it was deemed not feasible to conduct fieldwork at this point. Some heritage surveys (Rossouw 2006; Dreyer 2008; Tomose 2016; Van Vollenhoven 2018) were conducted in the greater area and this desktop study is informed   | Highly Desirable      |

| 1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES  |   |                       |
|--|---|-----------------------|
| <u>How will this development impact on the ecological integrity of the area?</u>                                     |   |                       |
| Question   | Response  | Level of Desirability |
|  | <p>by available data for the area. Based on these studies, resources such as archaeological resources, historical finds, cultural landscapes, burials and cemeteries can be expected in the study area. According to the Palaeontological Impact Assessment (Appendix I2) based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the loose sands of the Quaternary.</p> <p>However, should artefacts archaeological items be observed during the mining activities, then all activity should cease immediately, the area marked off activity and a specialists consulted prior to any further activity. This also includes if any graves are observed on site during activity progress then all activity should have ceased and the area demarcated as a no-go zone</p>   |                       |
| How will this development use and/or impact on non-renewable natural resources?                                      | <p>During the Prospecting right period (FS 30/5/1/1/2/449 PR &amp; FS 30/5/1/1/2/474 PR) the results showed that the annual production forecast of the proposed project is expected to be ±6 480 000 ton (mined from 3 sites) of which approximately 40% will be processed in the washing pans. The concentrate tapped into the holding bins comprise of ±1% of the total tons excavated; and the diamonds will be recovered from these bins at the off-site recovery plant.</p> <p>The annual head feed forecast of the proposed project is expected to be ±792 000 ton (mined from 3 sites) of which approximately 40% will be processed in the washing pans. The concentrate tapped into the holding bins comprise of ±1% of the total tons excavated; and the diamonds will be recovered from these bins at the off-site recovery plant. A recovery rate of ±0.5 carats/100 ton is expected which calculates to an annual production forecast of 3 960 carats/year.</p> <p>The primary goal of the proposed mining operation is the winning of alluvial diamonds. Gold recovered from the proposed mining area will be treated as a derivative, and the presence/absence thereof does not affect the feasibility of the proposed activity</p> | Highly Desirable      |
| How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? | <p>The proposed project will not require any additional electricity connections, as power existing power connection is in place and will be supported, when needed, by generators</p> <p>Water for processing purposes will be extracted from the Vaal River upon approval received from the Department of Water and Sanitation. Potable water will be obtained from existing boreholes on the farms in accordance with landowner approval. Vernon Mostert (Pty) Ltd will lodge a water use application to Department of Water and Sanitation</p>   | Desirable             |

| 1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES   |   |                       |
|---|---|-----------------------|
| <u>How will this development impact on the ecological integrity of the area?</u>  |   |                       |
| Question  | Response  | Level of Desirability |
| How were a risk-averse and cautious approach applied in terms of ecological impacts?  | Please refer to Part A(1)(g)(iv)(c) <i>Description of the specific environmental features and infrastructure on site – Site Specific Hydrology and Geohydrology, Site Specific Mining and Biodiversity Conservation Areas, and Site Specific Vegetation</i> for a full discussion in this regard.   | Desirable             |
| How will the ecological impacts resulting from this development impact on people's environmental right?   | Since 2016, Invest in Property 84 (Pty) Ltd, previously held a prospecting right (FS 30/5/1/1/2/449 PR) over the proposed mining right application. Owing to the prospecting outcome up until now, the Applicant applied for a mining right for the winning of alluvial diamonds and gold in which the activities will be similar to that of the Prospecting Right. As mentioned in Part A(1)(u)(i)(1) <i>Impact on the socio-economic condition of any directly affected person</i> , the activity may impact the local traffic levels, have a visual impact, affect air quality and noise ambiance, or result in the spreading of weeds/invaser plant species from the mining footprint. The degree and significance of the potential impacts are assessed in Part A(1)(h) <i>Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site through the life of the activity</i> . If the mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the potential ecological impacts associated with the proposed activity can be reduced to an acceptable level. | Desirable             |
| Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts. | As mentioned earlier, the applicant tends to the use the same workers as per the Prospecting Right and to strive in developing the local infrastructure and to uplift the local communities, to enable community members to become self-sustaining. It is therefore highly likely that the economic development injection to the local communities for the total duration of this mining right, should the mining right be granted,   | Highly Desirable      |
| Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?   | Ecological integrity objectives refer to the preservation of an area in its natural condition. This is also often coupled with the biodiversity management plan of an area. The study area does not fall within a Critical Biodiversity Area which does reduce the impact on the ecological integrity objective for the area. However, Ecological Support Areas are still present and through the transformation of natural areas for mining operations this will decrease the percentage of intact areas of the vegetation types in the area and will therefore also increase the importance of the preservation of remaining natural areas in the surroundings.   | Desirable             |
| Considering the need to secure ecological   | Kindly refer to the following sections of this report:  | Desirable             |

| 1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES   |  |                       |
|---|--|-----------------------|
| <u>How will this development impact on the ecological integrity of the area?</u>  |  |                       |
| Question  | Response   | Level of Desirability |
| integrity and a healthy biophysical environment, describe how the alternatives identified, resulted in the selection of the “best practicable environmental option” in terms of ecological considerations | <ul style="list-style-type: none"> <li>◆ Part A(1)(g) <i>Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site;</i></li> <li>◆ Part A(1)(g)(i) <i>Details of the development footprint alternatives considered;</i></li> <li>◆ Part A(1)(g)(vii) <i>The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected;</i></li> <li>◆ Part A(1)(g)(x) <i>Statement motivating the alternative development location within the overall site.</i></li> </ul> |                       |

| 2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT  |   |                       |
|---|---|-----------------------|
| <u>What is the socio-economic context of the area?</u>  |   |                       |
| Question  | Response  | Level of Desirability |
| What is the socio-economic context of the area?   | Please refer to Part A(1)(g)(iv)(1)(a) <i>Type of environment affected by the proposed activity - Socio-economic Environment.</i>   | Highly Desirable      |
| Considering the socio-economic context, what will the socio-economic impacts be of the development, and specifically also on the socio-economic objectives of the area? | <p>As mentioned earlier, a Social and Labour Plan (SLP) was submitted as part of the MR application of the Applicant. The SLP forms the basis for the implementation of programmes and projects as key activity drivers of the development and operation of the proposed mining activity in the Boshof area. It offers the building blocks for future economic development and growth of the local area. The scope of the document offers the Applicant a platform to engage in the development of the local economy and community through a basis of human resource development, economic delivery, business development and community participation. The nature of the document is therefore aimed at the widest possible comprehension and stimulation for inputs.</p> <p>The SLP notes that the Applicant proposes to have approximately 90 employees (30 employees per site) who will support approximately 288 dependents. Due to the fact that most of the employees will reside within Christiana, it is fair to presume that the majority of monthly earned salaries will be spent in the local area. Indirectly, through the payment for services and</p> |                       |



| 2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT  |  |                       |
|---|--|-----------------------|
| <u>What is the socio-economic context of the area?</u>  |  |                       |
| Question  | Response   | Level of Desirability |
|   | suppliers the mine also supports employment of the procurement partners.   |                       |
| How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities? | <p>If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the mining activities will not affect the physical, psychological, cultural or social needs of the community in a negative manner nor will the it impact negatively on the socio-economic status of the area.</p> <p>As mentioned earlier, should this mining right be approved the applicant will be able to,</p> <ul style="list-style-type: none"> <li>■ Maintain the current employees of the PR;</li> <li>■ It will also diversify the income of the property as well as potential employees and clients.</li> </ul> <p>In addition, the mine has to meet the commitments of the SLP regarding Human Resources Development, Local Economic Development, and the process pertaining to management of downscaling and retrenchment.</p> <p>Also refer to the discussion under Part A(1)(g)(vii) <i>The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.</i></p> | Highly Desirable      |
| Will the development result in equitable impact distribution, in the short- and long-term?  | The proposed project will operate in a socially and economically sustainable manner during both the short- and long term. The applicants employment equity is also in line with the provisions of the Mining Charter 2018, as well as the provisions of the Employment Equity Act, 1998 (as amended).  | Highly Desirable      |
| In terms of location, describe how the placement of the proposed development will contribute to the area.   | As mentioned earlier, the applicant previously held a prospecting right (FS 30/5/1/1/2/449 PR) over the proposed mining right application. The preferred site entails the mining of an area that corresponds to the approved prospecting right where results (to date) have shown that the prospecting footprint area has a high potential to yield diamondiferous gravel. The placement of the proposed activity will contribute to the area in terms of the social and labour commitments proposed by the MR Holder.   | Desirable             |
| How were a risk-averse and cautious approach applied in terms of socio-economic impacts?  | The mitigation measures proposed in this report, but more importantly those of the final EIAR and EMPR (to be drafted), are compiled in consultation with the specialists to reduce the potential impact that the proposed activity may have on the  | Desirable             |

| 2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT   |   |                       |
|--|---|-----------------------|
| <u>What is the socio-economic context of the area?</u>   |   |                       |
| Question   | Response  | Level of Desirability |
|  | receiving environment. Once approved, the management outcomes are legally binding to be implemented by site management for the duration of the site establishment-, operational- and decommissioning phases.  |                       |
| How will the socio-economic impacts resulting from this development impact on people's environmental right?  | Since 2016, Invest in Property 84 (Pty) Ltd, previously held a prospecting right (FS 30/5/1/1/2/449 PR) over the proposed mining right application. Owing to the prospecting outcome up until now, the Applicant applied for a mining right for the winning of alluvial diamonds and gold in which the activities will be similar to that of the Prospecting Right. As mentioned in Part A(1)(u)(i)(1) <i>Impact on the socio-economic condition of any directly affected person</i> , the activity may impact the local traffic levels, have a visual impact, affect air quality and noise ambiance, or result in the spreading of weeds/invaser plant species from the mining footprint. The degree and significance of the potential impacts are assessed in Part A(1)(h) <i>Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site through the life of the activity</i> . If the mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the potential ecological impacts associated with the proposed activity can be reduced to an acceptable level. | Desirable             |
| Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts? | As mentioned above should the mining activities be approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of low significance. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that no environmental rights of the surrounding residents/public will be affected by the socio-economic impacts associated with the proposed activity.   | Highly Desirable      |
| What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?   | The mitigation measures proposed in this report, but more importantly those of the final EIAR and EMPR (to be drafted), are compiled in consultation with the specialists to reduce the potential impact that the proposed activity may have on the receiving environment. Once approved, the management outcomes are legally binding to be implemented by site management for the duration of the site establishment-, operational- and decommissioning phases.  | Desirable             |
| What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate   | Also refer to the discussion under Part A(1)(g)(vii) <i>The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected</i> .   |                       |

| 2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT   |  |                       |
|--|--|-----------------------|
| <u>What is the socio-economic context of the area?</u>   |  |                       |
| Question   | Response   | Level of Desirability |
| against any person, particularly vulnerable and disadvantaged persons?   |  |                       |
| What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination? | <p>The mine operates in accordance with, amongst others, the following:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983 – to ensure agriculture related compliance;</li> <li>◆ Financial Provision Regulations, 2015 – to ensure compliance in terms of rehabilitation;</li> <li>◆ Mine Health and Safety Act, 1996 (as amended) – to ensure employee safety;</li> <li>◆ MPRDA, 2002 (as amended) – to ensure mining related compliance;</li> <li>◆ NEM:AQA, 2004 – to ensure air quality related compliance;</li> <li>◆ NEM:BA, 2004 – to ensure biodiversity related compliance;</li> <li>◆ NEM:WA, 2008 – to ensure waste related compliance;</li> <li>◆ NEMA, 1998 (as amended) – to ensure environmental related compliance;</li> </ul> | Highly Desirable      |
| What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?   | <p>Should the mining right application be approved the area will also be subject to compliance with the above listed.</p>  |                       |
| Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community that is consistent with the priority needs of the local area.                                      | <p>As mentioned earlier, the applicant intends to strive in developing the local infrastructure and to uplift the local communities, to enable community members to become self-sustaining. It is therefore highly likely that the economic development injection to the local communities for the total duration of this mining right, should the mining right be granted. In addition, the mine has to meet the commitments of the SLP regarding Human Resources Development, Local Economic Development, and the process pertaining to management of downscaling and retrenchment.</p>  | Highly Desirable      |
| What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of             | <p>The mine operates in accordance with the specifications of the Mine Health and Safety Act, 1996 (MHSA). Site management holds daily discussions with the staff regarding the work to be performed and the environment in which the work will take place. Grievances/concerns can be lodged during the daily site meetings.</p>  | Highly Desirable      |

| 2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT   |  |                       |
|--|--|-----------------------|
| <u>What is the socio-economic context of the area?</u>   |  |                       |
| Question   | Response   | Level of Desirability |
| workers to refuse such work will be respected and protected.   |  |                       |
| Describe how the development will impact on job creation in terms of, amongst other aspects?   | The applicant intends to provide a career development program which is aimed at providing better employment opportunities to employees and to develop the skills, competencies and education levels of employees so as to equip them to progress within their existing place of employment alternatively take up employment in a key position in a different company.  | Highly Desirable      |
| What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage.  | The applicant is required to operate under a valid mining right issued by the DMRE. Compliance of the mine with the approval conditions is reported on as per the departmental specifications. Should the application be approved the site will also be managed in accordance with all the mining and environmental related legislations.  | Highly Desirable      |
| Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left.  | It is believed that the mitigation measures proposed in this document is realistic and can be implemented (when applicable) by the mine. As mentioned earlier, due to the impracticality of importing large volumes of fill to restore the quarry pit to its original topography, the rehabilitation option is to develop the quarry into a minor landscape feature that will be rendered safe upon final site closure. The excavations will be filled and will be top-dressed with topsoil and vegetated with an appropriate grass mix and the area will be returned to agricultural use. If the disturbed areas are successfully rehabilitated no long-term management burden will be left behind. | Highly Desirable      |
| What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution environmental damage or adverse health effects will be paid for by those responsible for harming the environment. | In terms of Section 41 of the MPRDA, 2002 a mining right holder must submit a financial provision to the DMRE that is sufficient to rehabilitate or manage the negative environmental impacts related to the mining activity. Should the application be approved the DMRE will require the applicant to provide a bank guarantee that will be deemed sufficient to cover the financial provision amount needed to rehabilitated the mining footprint.  | Highly Desirable      |

| 2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT   |  |                       |
|--|--|-----------------------|
| <u>What is the socio-economic context of the area?</u>   |  |                       |
| Question   | Response   | Level of Desirability |
| Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified, resulted in the selection of the best practicable environmental option in terms of socio-economic considerations | <p>Kindly refer to the following sections of this report:</p> <ul style="list-style-type: none"> <li>◆ Part A(1)(g) <i>Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site;</i></li> <li>◆ Part A(1)(g)(i) <i>Details of the development footprint alternatives considered;</i></li> <li>◆ Part A(1)(g)(vii) <i>The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected;</i></li> <li>◆ Part A(1)(g)(x) <i>Statement motivating the alternative development location within the overall site.</i></li> </ul> | Desirable             |
| Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area.  | Refer to the discussion under Part A(1)(g)(vii) <i>The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.</i>  |                       |

**g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site.**

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

Site Layout alternative 1 was identified during the planning phase by the Applicant and project team, as the preferred and only viable site layout alternative. During the EIA process, the project team heeded the suggestions, and investigate the possible implementation thereof.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible (Appendix A: Map 4 of appendix H):

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.

- All of the lateral drainage lines which flow into the Vaal River including a 100m buffer.
- The pan systems occurring on the site, including small and degraded pans including a 100m buffer.
- Portions of Camel Thorn (*Vachellia erioloba*) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.

Site Layout alternative 2 was therefore included as per the above study in order to excluded the sensitive areas and found to be the preferred as the proposed alternative will not necessitate the loss of sensitive areas.

Project Alternative 1 entails the winning of alluvial diamonds and gold from minor areas ( $\pm 2$  ha) to be operated within the footprint of the major footprint area (3 955.7022 ha). The current project alternative proposes the simultaneous operation of three (3) minor areas through opencast and strip-mining methods, with the concentrate, recovered at the processing plant, transported to an off-site recovery plant. The operation of all minor areas will be in accordance with the conditions of the surface use agreement to be

signed by the Applicant and landowner prior to the commencement of mining. PA1 entails the disturbance of  $\pm 0.15\%$  of the proposed footprint area at any given time as concurrent rehabilitation is proposed. After supplementary information was obtained no additional project alternatives were deemed necessary during the EIA process.

Technology/Design Alternatives: As with the project alternatives, technology and design alternatives was considered during the EIA process. The following technology/design principles was considered by the Applicant and project team:

- The use of permanent infrastructure as opposed to temporary infrastructure;
- The processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant.

The use of permanent infrastructure as opposed to temporary infrastructure as well as processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant was assessed for the proposed mining but found not environmentally and practically suitable. Therefore, the use of temporary infrastructure as well as the processing of the concentrate at a remote recovery plant was deemed the only viable Site Layout alternative as it will have a much lower impact.

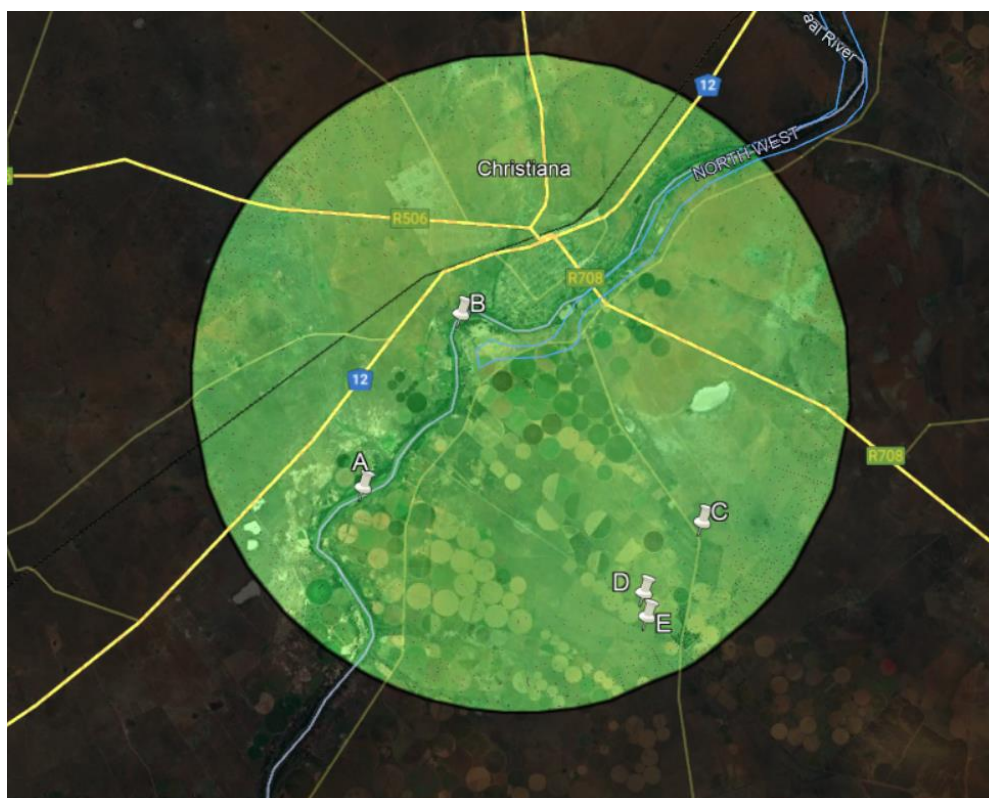
No-go Alternative: The no-go alternative entails no change to the status quo and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the area will remain that of agriculture, crop production, and game/livestock farming with the diamond and gold resources unmined. Amongst others, the socio-economic impact of mining on current, and future land uses of the study area was considered as part of the EIA process, and discussed in this document.

1. **Visual Characteristics** – The presence of mining related infrastructure (i.e. processing infrastructure, settling pond) as well as the excavations will impact on the visual character of the study area.

As mentioned above the operational phase that is presently expected to entail the simultaneous mining of three (3) minor mining areas within the footprint of the major mining right area. The estimated footprint of a single minor area is

proposed to be  $\pm 2$  ha, meaning that the footprint of the operational areas will calculate to a maximum of  $\pm 6$  ha at any given time (should all three minor areas be operating). The mining method to be implemented at each minor area will resemble the current prospecting invasive activities.

The viewshed analysis showed that the area will be highly visible however the visual impact of the proposed mining operation will be of low significance. The small scale of the proposed operation, as well as the fact that the mining activities will resemble the existing prospecting activities will minimize the visual impact. Should the Applicant successfully rehabilitate the mining area (upon closure), no residual visual impact is expected upon closure of the mine.



*Figure 2: Viewshed of the proposed mining footprint where the green shaded areas shows the positions from where the mining area (Proposed mining area) will be visible. (Image obtained from Google Earth).*

- Air & Noise Quality** –The air and noise ambiance of the study area was historically representative of an agricultural environment in which farming equipment operates with occasional dust emissions from denuded areas. The agricultural use of the study area intensified over years, and current land



uses include crop production supported by centre-pivot irrigation, orchards, dryland farming, game and livestock farming, diamond mining, and tourism, all of which contribute to the atmospheric quality and noise ambiance of the study area. A surfaced public road, turning from the R708, cross the proposed mining area, and will be used as main access road. This road follows the Vaal River in a south-western direction.

3. **Geology** – The site specific geology and soils of the proposed mining area resembles that of the wider study area as discussed earlier. The feasibility study done by Anmic diamonds, in 2016, on a portion of the farm Smithskraal 1519 determined that the thickness of the gravels ranges from 200 mm to 450/500 mm (averaging out at  $\pm 300$  mm). The gravels consist of various varieties of quartz, jasper, agate and silicified wood etc. all good indicators. The geologist dated the gravel bed at roughly 1 million years, with the silicified wood in the gravels dating back 280 million years. ARS Geology Consulting and Mineralogical Services confirmed the presence of accessory gold particles in the diamondiferous gravels between Christiana and Warrenton in 2018.
  
4. **Hydrology and Geohydrology** – The hydrology of the proposed mining footprint is representative of the regional hydrology described for the study area earlier in this report. The Vaal River forms the north-western boundary of the proposed mining area. Further to this, the earmarked footprint harbors some drainage lines with associated floodplains and potential wetlands of importance. According to the SANBI National Wetlands and FEPA information a few wetlands do occur within the study area as shown in the figure below. The wetlands mainly fall within one of the following categories:
  - Floodplain Wetland: The mostly flat or gently sloping wetland area adjacent to and formed by a lowland or upland floodplain river, and subject to periodic inundation by overtopping of the channel bank (SANBI, 2009).
  - Valley-Floor Wetland: Longitudinal wetland that runs along a valley floor. This type of wetland is associated with valley side-slopes within  $\pm 500$  m of the aquatic ecosystem. (SANBI, 2013).
  - Plains Wetland: Plains are differentiated from valley floors by the absence of surrounding side-slopes. Only very flat areas with a gradient of less than 1:100 are considered to be plains. (SANBI, 2013).

■ Bench Wetland: A relatively discrete area of mostly level or nearly level high ground, including hilltop, saddles and shelves. Benches are significantly less extensive than plains. (SANBI, 2013).

5. **Biodiversity and Conservation** – the Free State Province Biodiversity Management Plan (2015) regards the site as being of Ecological Support Area (ESA) 1 and 2 as well as Degraded and Other categories do not contain Critical Biodiversity Area (CBA) which would be of high conservation value. Despite this, natural areas do still contain some elements of conservation value such as a range of protected succulent and geophytic species and large and old specimens of the protected *Vachellia erioloba* (Camel Thorn). Ground truthing by specialist confirmed that it is clear that the majority of the site has been transformed by agricultural and mining operations. This would therefore increase the conservation value of those portions of remaining natural vegetation, i.e. the less habitat remains, the rarer it will be, the higher the conservation value will become. However, when looking at available resources it is evident that the vegetation types on the site, Kimberley Thornveld and Highveld Alluvial Vegetation is not currently regarded as rare or endangered and still covers large areas of the region. This will therefore not contribute toward their conservation value.
6. **Groundcover** – According to Bezuidenhout and Smit (2000) the proposed area has plains often slightly irregular with well-developed tree layer with *Acacia erioloba*, *A. tortilis*, *A. karroo* and *Boscia albitrunca* and well-developed shrub layer with occasional dense stands of *Tarchonanthus camphoratus* and *A. mellifera*. Grass layer open with much uncovered soil.
7. **Fauna** – Fauna that may be present on, or visit the study area, includes reptiles such as tortoises, harlequin snakes, sand snakes, skaapstekers, house and mole snakes, puff adders and even cape cobras. The area is also home to numerous bird species nesting in the riparian vegetation along the Vaal River, as well as the shrub and tree cover inland from the river valley. Various game farms were established within the area, where amongst other species springbok, kudu, oryx, zebra, waterbuck, ostrich and black wildebeest roam. Duiker and steenbok also frequent the area. Predators such as the African wild cat, aardwolf, black-backed jackal, caracal, and genet are also present within certain natural areas.

8. **Existing infrastructure** –The infrastructure within the mining footprint include, but isn't limited to, the following:

- Fencing;
- Housing and supporting structures;
- Pivots;
- Power lines.
- Roads (public as well as private); and
- Water abstraction and storage infrastructure.

The proposed mining method is such that it can be moved away from build structures and existing infrastructure, thereby rendering the impact in this regard insignificant. As mentioned earlier, approximately ±34% of the mining right footprint remains to be prospected and/or mined by the Applicant when the already developed areas are excluded from the application footprint. Should the Applicant implement the mitigation measures proposed in the EMPr the existing infrastructure in the footprint area should be protected against mining related impacts of the proposed activity.

**i) Details of the development footprint alternatives considered.**

With reference to the site plan provided as Appendix C2 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

**Site Alternatives:**

Site Layout Alternative 1 entails the mining of an area that corresponds with the prospecting right (FS30/5/1/1/2/449PR), previously held by the Applicant. Although a site alternative for the major mining area (3 955.7022 ha) is not deemed viable, site alternatives are possible within the boundary of the major mining area, as the minor areas (±2 ha) will be moved in between areas of agricultural importance, buffer zones and no-go areas, and any other sensitive areas identified during the EIA process. Exclusion areas will be defined in the environmental impact assessment report.

*Table 6: GPS Coordinates of Site Layout alternative 1.*

| NUMBER | DEGREES, MINUTES, SECONDS | DECIMAL DEGREES |
|--------|---------------------------|-----------------|
|--------|---------------------------|-----------------|

|    | LAT (S)        | LONG (E)      | LAT (S)      | LONG (E)    |
|----|----------------|---------------|--------------|-------------|
| 0  | 27°58'28.24"S, | 25°,6'4.79"E  | -27.974510°S | 25.101330°E |
| 1  | 27°58'7.46"S,  | 25°,6'46.01"E | -27.968740°S | 25.112781°E |
| 2  | 27°57'36.40"S, | 25°,7'4.12"E  | -27.960110°S | 25.117810°E |
| 3  | 27°57'15.34"S, | 25°,7'27.62"E | -27.954260°S | 25.124340°E |
| 4  | 27°56'55.50"S, | 25°,7'55.20"E | -27.948750°S | 25.132000°E |
| 5  | 27°56'5.71"S,  | 25°,7'56.57"E | -27.934920°S | 25.132380°E |
| 6  | 27°55'48.65"S, | 25°,7'51.78"E | -27.930180°S | 25.131050°E |
| 7  | 27°55'38.28"S, | 25°,7'55.24"E | -27.927300°S | 25.132010°E |
| 8  | 27°59'3.16"S,  | 25°12'26.28"E | -27.984210°S | 25.207300°E |
| 9  | 28°,0'12.46"S, | 25°11'22.02"E | -28.003460°S | 25.189450°E |
| 10 | 28°,0'35.96"S, | 25°11'25.55"E | -28.009990°S | 25.190430°E |

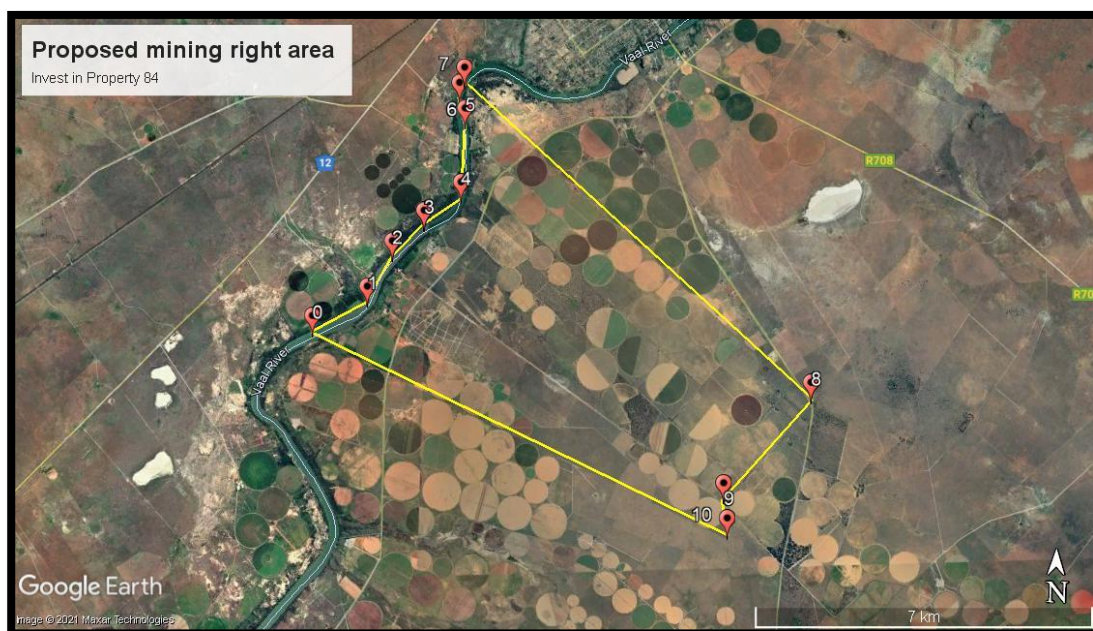


Figure 3: Satellite view showing the position of Site Layout alternative 1 within the surrounding landscape. (Image obtained from Google Earth)

Site Layout alternative 1 was identified during the planning phase by the Applicant and project team, as the preferred and only viable site alternative. During the EIA process, the project team heeded the suggestions, and investigate the possible implementation thereof.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining

operations as far as possible (Appendix A: Map 4 of appendix H): ▪ The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.

- All of the lateral drainage lines which flow into the Vaal River including a 100m buffer.
- The pan systems occurring on the site, including small and degraded pans including a 100m buffer.
- Portions of Camel Thorn (*Vachellia erioloba*) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.

Site alternative 2 was therefore included as per the above study in order to excluded the sensitive areas and found to be the preferred as the proposed alternative will not necessitate the loss of sensitive areas. The outer boundaries of the mining area remain the same with exclusions of areas that may not be mined.

*Table 7: GPS Coordinates of Site layout Alternative 2 (Preferred Site Alternative) other boundaries, but with excluded areas as per figure 3.*

| NUMBER | DEGREES, MINUTES, SECONDS |               | DECIMAL DEGREES |             |
|--------|---------------------------|---------------|-----------------|-------------|
|        | LAT (S)                   | LONG (E)      | LAT (S)         | LONG (E)    |
| 0      | 27°58'28.24"S,            | 25°,6'4.79"E  | -27.974510°S    | 25.101330°E |
| 1      | 27°58'7.46"S,             | 25°,6'46.01"E | -27.968740°S    | 25.112781°E |
| 2      | 27°57'36.40"S,            | 25°,7'4.12"E  | -27.960110°S    | 25.117810°E |
| 3      | 27°57'15.34"S,            | 25°,7'27.62"E | -27.954260°S    | 25.124340°E |
| 4      | 27°56'55.50"S,            | 25°,7'55.20"E | -27.948750°S    | 25.132000°E |
| 5      | 27°56'5.71"S,             | 25°,7'56.57"E | -27.934920°S    | 25.132380°E |
| 6      | 27°55'48.65"S,            | 25°,7'51.78"E | -27.930180°S    | 25.131050°E |
| 7      | 27°55'38.28"S,            | 25°,7'55.24"E | -27.927300°S    | 25.132010°E |
| 8      | 27°59'3.16"S,             | 25°12'26.28"E | -27.984210°S    | 25.207300°E |
| 9      | 28°,0'12.46"S,            | 25°11'22.02"E | -28.003460°S    | 25.189450°E |
| 10     | 28°,0'35.96"S,            | 25°11'25.55"E | -28.009990°S    | 25.190430°E |



*Figure 4: Satellite view showing the position of Site Layout Alternative 2 within the surrounding landscape. (red – very high sensitivity, orange – high sensitivity, yellow – moderate sensitivity and green – low sensitivity) (Image obtained from the Ecological and Wetland Assessment Appendix H)*

Project Alternative 1 entails the winning of alluvial diamonds and gold from minor areas ( $\pm 2$  ha) to be operated within the footprint of the major footprint area (3 955.7022 ha). The current project alternative proposes the simultaneous operation of three (3) minor areas through opencast and strip-mining methods, with the concentrate, recovered at the processing plant, transported to an off-site recovery plant. The operation of all minor areas will be in accordance with the conditions of the surface use agreement to be signed by the Applicant and landowner prior to the commencement of mining. PA1 entails the disturbance of  $\pm 0.15\%$  of the proposed footprint area at any given time as concurrent rehabilitation is proposed. After supplementary information was obtained no additional project alternatives were deemed necessary during the EIA process.

Technology/Design Alternatives: As with the project alternatives, technology and design alternatives was considered during the EIA process. The following technology/design principles was considered by the Applicant and project team:

- The use of permanent infrastructure as opposed to temporary infrastructure;

- The processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant.

The use of permanent infrastructure as opposed to temporary infrastructure as well as processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant was assessed for the proposed mining but found not environmentally and practically suitable. Therefore, the use of temporary infrastructure as well as the processing of the concentrate at a remote recovery plant was deemed the only viable site alternative as it will have a much lower impact.

No-go Alternative: The no-go alternative entails no change to the status quo and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the area will remain that of agriculture, crop production, and game/livestock farming with the diamond and gold resources unmined. Amongst others, the socio-economic impact of mining on current, and future land uses of the study area was considered as part of the EIA process, and discussed in this document.

## ii) Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attend public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land).

During the initial public participation process the stakeholders and I&AP's were informed of the project by means of background information documents that were sent or hand delivered directly to the contact persons. A 30 days commenting period was allowed which expired on 03 December 2018. The following table provides a list of the I&AP's and stakeholders that were informed of the project:

*Table 8: List of the landowners, I&AP's and stakeholders that were supplied with a copy of the background information document.*

| LANDOWNERS          |   |
|---------------------|---|
| Dimension Grains CC | ◆ Portion 0 (Remaining Extent) of the farm Greylingslyn 355 |
| FJ Bellinghan Trust | ◆ Portion 1 of the farm Greylingslyn 355                    |

|   |   |
|---|---|
|   |   |
| Seriso 654 (Pty) Ltd  | ◆ Portion 2 of the farm Greylingslyn 355  |
| Belle Rive Properties (Pty) Ltd                                     | ◆ Portion 0 (Remaining Extent) of the farm Van Aswegens Hoek 493<br>◆ Portion 2 (Remaining Extent) of the farm Van Aswegens Hoek 493<br>◆ Portion 4 of the farm Van Aswegens Hoek 493 |
| Conrad & Heste de Beer (Pty) Ltd                                    | ◆ Portion 1 (Remaining Extent) of the farm Van Aswegens Hoek 493  |
| Dirk de Beer Trust  | ◆ Portion 6 of the farm Van Aswegens Hoek 493   |
| <b>SURROUNDING LANDOWNERS &amp; INTERESTED AND AFFECTED PARTIES</b> |   |
| Bessieslaagte Trust   | ◆ Portion 7 (Remaining Extent) of the farm Bessies Laagte 328   |
| Mr J Smit   | ◆ Portion 0 (Remaining Extent) of the farm Bessies Laagte 328   |
| GCT Trust   | ◆ Portion 11 (Remaining Extent) of the farm Bloemheuvel 327<br>◆ Portion 12 (Remaining Extent) of the farm Bloemheuvel 327<br>◆ Portion 13 of the farm Bloemheuvel 327                |
| Mr SH Keyser  | ◆ Portion 14 (Remaining Extent) of the farm Bloemheuvel 327   |
| Mr FW Keyser  | ◆ Portion 15 (Remaining Extent) of the farm Bloemheuvel 327   |
| Bloemheuvel Trust   | ◆ Portion 16 (Remaining Extent) of the farm Bloemheuvel 327   |
| Mr PCF Swiegers   | ◆ Portion 3 (Remaining Extent) of the farm Bloemheuvel 327  |
| Mr JP Sonnenberg  | ◆ Portion 0 (Remaining Extent) of the farm Diamant 631  |
| Clisa 83 (Pty) Ltd  | ◆ Portion 6 of the farm Diamant 631<br>◆ Portion 12 of the farm Diamant 631<br>◆ Portion 13 (Remaining Extent) of the farm Diamant 631  |



|   |   |
|---|---|
| Graven Wild (Pty) Ltd   | ◆ Portion 7 of the farm Diamant 631   |
| Michiel van de Venter Testamentêre Trust  | ◆ Portion 0 (Remaining Extent) of the farm Kalkput 460  |
| Mr S de Beer  | ◆ Portion 1 of the farm Kalkput 460   |
| Leeuheuwel Boerdery (Pty) Ltd   | ◆ Portion 2 (Remaining Extent) of the farm Overschot 496<br>◆ Portion 1 of the farm Pontplaas 664 |
| Pontriver Farming (Pty) Ltd   | ◆ Portion 0 (Remaining Extent) of the farm Pontplaas 664  |
| <b>STAKEHOLDERS</b>   |   |
| <ul style="list-style-type: none"> <li>◆ Department of Economic Small Business Development, Tourism and Environmental Affairs (DETEA);</li> <li>◆ Department of Public Works and Infrastructure (PWI);</li> <li>◆ Department of Agriculture and Rural Development (DARD);</li> <li>◆ Department of Labour (DoL);</li> <li>◆ Department of Police, Roads and Transport (DPRT);</li> <li>◆ Department of Water and Sanitation (DWS);</li> <li>◆ Lekwa-Teemane Local Municipality (LRLM);</li> <li>◆ Tokologo Local Municipality (TLM);</li> <li>◆ Tokologo Local Municipality – ward councillor (Ward 4);</li> <li>◆ Lejweleputswa District Municipality (LDM);</li> <li>◆ Eskom;</li> <li>◆ South African Heritage Resources Agency (SAHRA)</li> </ul> |   |

Table 9: List of landowners, I&AP's and stakeholders that registered on the project.

| LANDOWNERS / I&AP'S / STAKEHOLDERS   |
|--|
| <ul style="list-style-type: none"> <li>■ Dimension Grains CC (TJ Delpont)</li> <li>■ FJ Bellingan Trust (FJ Bellinghan)</li> <li>■ Seriso 654 (Pty) Ltd (LH Claassen)</li> <li>■ Mr L Lithoko (Attended Public Meeting)</li> <li>■ Mr S Olifant (Attended Public Meeting)</li> </ul> |

Mr H van der Merwe (Attended Public Meeting)

An advertisement was placed in the Bloemnuus on 01 November 2018 and on-site notices were placed on 02 November 2018 at the northern and southern boundary of the application area, the Spar in Christiana and the Suidwes Co-Operation in Boshof. A public meeting was held on 20 November 2018 where the project was presented and discussed. Meeting minutes are attached refer to Appendix G2.

The application for a mining right (together with supporting documentation) as well as the application for an environmental authorisation were uploaded simultaneously onto the SAMRAD system on 15th of June 2021. DMRE accepted the application on 6th of July 2021 and the project was assigned with FS 30/5/1/2/2/10067 MR as reference number.

A second advertisement was placed in the Bloemnuus on 22 July 2021 and additional on-site notices were placed. A second public meeting was held on 12 August 2021 where the project was presented and discussed. Meeting minutes are attached refer to Appendix G2.

In compliance with the timeframes stipulated in the EIA Regulations, 2014 (as amended) the Draft Scoping Report (DSR) was compiled to allow perusal of the report by the I&AP's and stakeholders listed above. A 30-day commenting period, that ended on 23 August 2021, was allowed for perusal of the documentation and submission of comments.

Comments or response received on the DSR were incorporated into the Final Scoping Report (FSR) and was submitted to DMRE for decision making. Approval of the Final Scoping Report was received on 6 October 2021. The Draft Environmental Impact Assessment Report was circulated for public comment for a 30-day commenting period. The comments received on the draft EIA & EMPR were incorporated into the final EIA & EMPR to be submitted for decision making to DMRE.

See attached Appendix G2 as proof that the I&AP's and stakeholders were contacted:

iii) Summary of issues raised by I&AP's

(Complete the table summarizing comments and issues raised, and reaction to those responses)

Table 10: Summary of issues raised by I&AP's.

| Interested and Affected Parties  |          | Date Comments Received | Issues raised   | EAP's response to issues raised by the Applicant   |
|--|----------|------------------------|---|--|
| List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted  |          |                        |   |  |
| <b><u>AFFECTED PARTIES</u></b>   |          | -                      | -   | -  |
| <b>Landowner/s</b>   | <b>X</b> | -                      | -   | -  |
| Dimension Grains CC<br>♦ Portion 0 (Remaining Extent) of Greylingslyn 355  | X        | 03/12/2018             | Mr Delpport registered Dimension Grains CC as I&AP submitting the comments as listed below. | Greenmined acknowledged receipt of the registration on 3 December 2018, and responded as listed below. |
| <p>Comments received from Dimension Grains CC:</p> <p>“1. As land owning trust we herewith register as an interested party with regards to above application.<br/>                 2. CC Member TJ Delpport<br/>                 3. Landowner Dimension Grains CC Reg nr 2001/080724/23<br/>                 4. Contact nr 0828004580<br/>                 5. Address P.O. Box 97 CHRISTIANA 2680<br/>                 6. We are an affected and interested party due to the fact that we are the land owners in respect of the land: Remainder of the Farm Greylingslyn 355 RD,<br/>                 7. As landowner, invest in property 84 (PTY) LTD, (Applicant), has an obligation in terms of section 22(4)(b) of the mineral resources and development act 28 of 2002, as amended and the EIA Regulations, 2016 to consult with Dimension Grains CC, a date for such consultation will be established where all concerns can be raised.”</p> |          |                        |   |  |

Response to Dimension Grains CC:

“Greenmined Environmental (hereinafter “Greenmined”) herewith acknowledge receipt of your email, which correspondence was received on 3 December 2018, with regards to the proposed mining right application to be submitted on behalf of Invest in Property 84 (Pty) Ltd.

Greenmined, on behalf of the applicant, registered you as an interested and affected party (I&AP) on the project and will hence forth keep you updated on the progress of the Environmental Impact Assessment process.

As part of the public participation process required in terms of NEMA, the applicant will consult with all landowners concerning access to their properties prior to commencement of any mining activity.

We trust you will find this in order. Please do not hesitate to contact me in the event of any uncertainties.”

|   |   |             |  |  |
|---|---|-------------|--|--|
| FJ Bellingan Trust<br>♦ Portion 1 of Greylingslyn 355 | X | 281/11/2018 | Mr FJ Bellingan registered FJ Bellingan Trust as I&AP submitting the comments as listed below. | Greenmined acknowledged receipt of the registration on 3 December 2018, and responded as listed below. |
|---|---|-------------|--|--|

Comments received from FJ Bellingan Trust:

“1. As a land owning trust we herewith register as an interested party with regards to above application.

2. Trustee: F.J. Bellingan
3. Landowner: F.J. Bellingan Trust (IT 569/07)
4. Contact No: 082 923 7909
5. Address: P.O. Box 408  
CHRISTIANA  
2680

6. We are an affected and interested party due to the fact that we are the land owners in respect of the land: Portion 1 of the Farm: Greylingslyn – 355 RD.

7. As landowner, investing in property 84 (PTY) LTD, (Applicant), has an obligation in terms of section 22(4)(b) of the mineral resources and development act 28 of 2002, as amended and the EIA Regulations, 2016 to consult with F.J. Bellingan Trust, a date for such consultation will be established where all concerns can be raised.”

Response to FJ Bellingan Trust:

“Greenmined Environmental (hereinafter “Greenmined”) herewith acknowledge receipt of your email, which correspondence was received on 28 November 2018, with regards to the proposed mining right application to be submitted on behalf of Invest in Property 84 (Pty) Ltd.

Greenmined, on behalf of the applicant, registered the F.J. Bellingan Trust (the “Trust”) as an interested and affected party (I&AP) on the project and will hence forth keep you updated on the progress of the Environmental Impact Assessment process.

As part of the public participation process required in terms of NEMA, the applicant will consult with all landowners concerning access to their properties prior to commencement of any mining activity.

We trust you will find this in order. Please do not hesitate to contact me in the event of any uncertainties.”

|   |   |            |  |  |
|---|---|------------|--|--|
| Seriso 654 (Pty) Ltd<br><br>♦ Portion 2 of Greylingslyn 355 | X | 29/11/2018 | Mr Claassen registered Seriso 654 (Pty) Ltd as I&AP submitting the comments as listed below. | Greenmined acknowledged receipt of the registration on 3 December 2018, and responded as listed below. |
|---|---|------------|--|--|

Comments received from Seriso 654 (Pty) Ltd:

“1. As a land owning trust we herewith register as an interested party with regards to above application.

2. Trustee: Louis Hendrik Claassen

3. Landowner: Louis Hendrik Claassen

4. Contact No: 082 889 7204

5. Address: Seriso 654

Portion 2 of the farm Greylingslyn 355

6. We are an affected and interested party due to the fact that we are the land owners in respect of the land: Portion 2 of the farm Greylingslyn – 355D.

7. As landowner, investing in property 84 (PTY) LTD, (Applicant), has an obligation in terms of section 22(4)(b) of the mineral resources and development act 28 of 2002, as amended and the EIA Regulations, 2016 to consult with Louis Hendrik Claassen, a date for such consultation will be established where all concerns can be raised.”

Response to Seriso 654 (Pty) Ltd:

“Greenmined Environmental (hereinafter “Greenmined”) herewith acknowledge receipt of your email, which correspondence was received on 29 November 2018, with regards to the proposed mining right application to be submitted on behalf of Invest in Property 84 (Pty) Ltd.

Greenmined, on behalf of the applicant, registered you as an interested and affected party (I&AP) on the project and will hence forth keep you updated on the progress of the Environmental Impact Assessment process.

As part of the public participation process required in terms of NEMA, the applicant will consult with all landowners concerning access to their properties prior to commencement of any mining activity.

We trust you will find this in order. Please do not hesitate to contact me in the event of any uncertainties.”

Objection received from Japie van Zyl Attorneys on behalf of FJ Bellingan Trust, Dimension Grains CC, and Seriso 654 (Pty) Ltd on 28 January 2019:

“We confirm that we act on behalf of and hereby register our clients as interested and affected parties:

1. the Trustees of the FJ Bellingan Trust, (Reg. nr.: IT569/2007). Our client is surface owner of Portion 1 of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 212.9167 hectares, held under Title Deed: T13717/2013;
2. Dimension Grains CC, (Reg. nr.: 2001/080724/23), who is the owner of the Remaining Extent of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 133.9079 hectares, held under Title Deed: T16694/2007;
3. Seriso 654 (Pty) Ltd, (Reg. nr.: 2005/023522/07), who is the owner of Portion 2 of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 816.2202 hectares, held under Title Deed: T11965/2014;

We attach hereto an objection against the application for the mining right sent to the Department of Mineral Resources.

We have submitted an application for access to records at the Department of Mineral Resources.

The information requested is the following:

1. With regard to the application for a mining right:
  - 1.1 a copy of the application document;
  - 1.2 a copy of proof of the date of submission of the application for the mining right;
  - 1.3 a copy of the regulation 2(2) map;
  - 1.4 a copy of the mine work programme;
  - 1.5 a copy of proof of notification and consultation with the surface owner in terms of Sections 16(4)(b) and 22(4)(b) of the MPRDA;
  - 1.6 a copy of the environmental management programme;
  - 1.7 a copy of the water use authorization / water licence;
  - 1.8 a copy of the financing plan as submitted or proof of financial capability of the applicant;
  - 1.9 a copy of proof of technical capability of the applicant;
  - 1.10 a copy of the scoping report;
  - 1.11 a copy of the environmental impact study;
  - 1.12 a copy of the Social and Labour Plan;
  - 1.13 a copy of the acceptance letter of the application;
  - 1.14 a list of the properties over which the right was applied for;
  - 1.15 a copy of the mining right, if executed.
  
2. With regard to the prospecting right as executed under reference number: FS 30/5/1/1/2/449 PR:
  - 2.1 a copy of the bank guarantee submitted for the prospecting right;
  - 2.2 a copy of the approved prospecting work programme;
  - 2.3 a copy of the environmental management plan approved for the prospecting right;
  - 2.4 copies of any Section 93 or 47 notices issued during the prospecting activities;
  - 2.5 copies of the water licences issued during the prospecting activities.

It shall be highly appreciated if you can provide us with this information as requested.

It is in any event part of your obligation to consult with interested and affected parties to provide the information.

Please note that the objection attached is a preliminary document and that it shall be amplified once we receive all the information as requested from the Department of Mineral Resources.”

Objection sent to DMRE by Japie van Zyl Attorneys on behalf of FJ Bellingan Trust, Dimension Grains CC, and Seriso 654 (Pty) Ltd on 18 December 2018:

## **“1. INTRODUCTION**

1.1 We refer to the above mentioned application for a mining right submitted by Invest in Property 84 (Pty) Ltd, (“the Applicant”) to mine for alluvial diamonds, gold and sand.

1.2 It appears from the documents provided that the application for the mining right was submitted on Portions 1, 2, 4, 6 and the Remaining Extent of the farm Van Aswegens Hoek 493, Registration Division: Boshoff, and, on Portion 1, 2 and the Remaining Extent of the farm Greylingslyn 355, Registration Division: Boshoff, Free State Province.

## **2. CLIENTS AND PROPERTY**

2.1 We confirm that we act on behalf of:

2.1.1 the Trustees of the FJ Bellingan Trust, (Reg. nr.: IT569/2007). Our client is surface owner of Portion 1 of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 212.9167 hectares, held under Title Deed: T13717/2013;

2.1.2 Dimension Grains CC, (Reg. nr.: 2001/080724/23), who is the owner of the Remaining Extent of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 133.9079 hectares, held under Title Deed: T16694/2007;

2.1.3 Seriso 654 (Pty) Ltd, (Reg. nr.: 2005/023522/07), who is the owner of Portion 2 of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 816.2202 hectares, held under Title Deed: T11965/2014; (“the Properties”);

## **3. REQUEST FOR ACCESS TO INFORMATION**

3.1 We have submitted an application for access to information requesting certain information about the envisaged mining activities. We have not yet received this information.

3.2 This is then a preliminary objection and shall we amplify our objection once we receive the information as requested in terms of our request for access to information.

## **4. BACKGROUND INFORMATION ABOUT SURFACE ACTIVITIES**

4.1 The Properties of our clients have been developed into farming units. Millions of rand have been invested to establish these farming units. Farming activities are conducted in a sustainable manner to ensure future cultivation and the farming and breeding of animals.



4.2 Statistics show that 12% of South Africa's land can be used for crop production and that only 22% of this is high potential arable land. The greatest limitation on sustainable crop production is the availability of water and the uneven and unreliable rain fall. Farming is of vital importance to the economy with 638 000 people formally employed although it is estimated that around 8.5 million people are directly or indirectly dependent on the agriculture sector for employment and income. The sector's significance is largely because of its potential to create jobs. Worldwide food and water security have become a growing concern and population dynamics a reality.

## 5. IMPACT ON FARMING

5.1 The envisaged mining activities shall have a disastrous impact on the farming activities being conducted on the Properties.

5.2 The envisaged activities must thus be taken into consideration and the impact it will have on food security. Pilot studies advise the dire consequences that will follow because of the impact of this kind of mining on agriculture. These studies assessed the impacts of the mining on transformation, ranging from the loss of production, resulting in price increases to the loss of employment, soil degradation and air pollution and health impacts. The studies concluded that the effects on agriculture are immense and some effects are irreversible. Given that a large portion of South Africa's high potential arable soils have already been destroyed by mining activities, special care must be taken of the limited available high potential arable land.

5.3 One of the aspects the Minister must consider before he grants a mining right is if the mining will not result in unacceptable pollution, ecological degradation or damage to the environment.

5.4 The impact of the envisaged mining activities will destroy the surface owners' chances to conduct farming in a sustainable manner.

5.5 The envisaged activities are thus unacceptable and should the application for the mining right also be refused on this ground.

5.6 Mining shall be detrimental to the farming activities in the event that it shall result in unacceptable pollution, ecological degradation and damage.

5.7 According to the background information document, excavators will open pits of ±350 cubic metres that will vary in depth from 300 mm to 1.2 metre after removal of topsoil. This is incorrect and misleading information. Most of the prospecting pits indicated that the gravels will be much deeper and closer to 5 metres.

5.8 It is impossible that no further activities will be required to win and extract gold. The extraction of gold is a specific process which have to be followed for which various other authorities are needed which shall include but not be limited to authorities to be issued in terms of the Precious Metals Act and other relevant legislation.

## 6. CONSULTATION

6.1 The Constitutional Court rules in the case of Bengwenyama Minerals (Pty) Ltd that consultation will entail the following:

*"The consultation process required by section 16(4)(b) of the Act thus requires that the applicant must:*

- (a) inform the landowner in writing that his application for prospecting rights on the owner's land has been accepted for consideration by the Regional Manager concerned;*
- (b) inform the landowner in sufficient detail of what the prospecting operation will entail on the land, in order for the landowner to assess what impact the prospecting will have on the landowner's use of the land;*
- (c) consult with the landowner with a view to reach an agreement to the satisfaction of both parties in regard to the impact of the proposed prospecting operations; and*
- (d) submit the result of the consultation process to the Regional Manager within 30 days of receiving notification to consult."*

6.2 This objection is against an application for a mining right. Given the extent and effect of the mining activities, the obligation to consult is wider and shall be interpreted much more stringent as in the case of a prospecting right.

6.3 Section 22(4)(b) of the MPRDA stipulates that the applicant for a mining right has to consult in the prescribed manner with the land owner, lawful occupier and any interested and affected party and include the result of the consultation in the relevant environmental reports. Chapter 6 of the regulations published in terms of National Environmental Management Act ("NEMA") stipulates that the applicant must give written notice to the occupiers of the site, the owner or person in control of the site and owners or persons in control of occupiers of land adjacent to the site.

6.4 In the Fuel Retailers Association of SA court case (CCT 67/06/judgement date 7 June 2007) the Constitutional Court handed down judgement about the nature and scope of the obligations of environmental authorities when they take decisions that may affect the environment and particularly the interaction between socio-economic development and the protection of the environment. In that case the court ruled that consideration must be given to the socially, environmentally, and economically sustainability of the proposed project. The court held that the constitution recognizes the interrelationship between the protection of the environment and socio-economic development. No information was provided to our client as interested and affected party whether the proposed development would be socially, environmentally and economically sustainable.

6.5 An applicant for a mining right must thus notify in writing and consult with the land owner or lawful occupier and any other affected party and submit the result of the consultation of the regulatory authority.

6.6 In terms of the environmental impact assessment regulations published in GNR982 of 4 December 2014 in the Government Gazette nr: 38282 ("the Gazette"), all interested and affected parties must be provided an opportunity to submit comments on each of the scoping report, Environmental Management Programme, etc. The public participation process contemplated in Regulation 40 must provide interested and affected parties access to all information that reasonably has or may have the potential to influence any decision with regard to an application for a prospecting or mining right. The applicant for a prospecting or mining right has to comply with Regulation 40 and the obligation to follow a process of public participation. This was not done by the Applicant in this matter.

6.7 In terms of Regulation 41 of the Gazette a person conducting a public participation process must give notice to all potential interested and affected parties of an application which is subject to a public participation process. Regulation 41(2)(b) of the Gazette specifically provides that written notice must be given to interested and affected parties. It is

our instructions that there was non-compliance with Regulation 41(2)(b).

6.8 In an application for an environmental authorization, the applicant and its environmental assessment practitioner must comply with appendix 1 of the regulations as published in the Gazette and more particularly should have given a full description of the process undertaken to identify, assess and rank the impact the activity will impose on the environment, the interested and affected parties and indicate the life of the activity. The applicant should also assess and identify potential and significant impacts or risks of the project.

6.9 In considering the application for the mining right the Minister must determine if the mining will not result in unacceptable pollution, ecological degradation or damage to the environment. This contemplates the integration of environmental protection and socio-economic development and envisages that the two will be balanced through the ideal of sustainable development. The obligation to consult is wider than to assess need and desirability. It also comprehends the obligation to assess the cumulative impact on the environment of the proposed project. An unsustainable mining project is in itself detrimental to the environment. This was not done by the Applicant.

6.10 Our clients have not been consulted with and was there non-compliance by the Applicant of this obligation.

## **7. WATER USE LICENCE**

7.1 The Applicant will have to apply for a water use licence to conduct the mining activities.

7.2 There is no available water in the Vaal River to be provided in the authority to use water in the mining activities.

7.3 The water use licence can thus not be issued in this instance and shall it not be possible to conduct the mining activities without a water use licence.

7.4 A separate objection shall be sent to the Department of Water Affairs.

7.5 In the background document as provided, the Applicant indicated that it shall use water from boreholes. There is no available water from the boreholes and shall the surface owners not consent to the use of boreholes for water use activities.

## **8. ACCESS TO FINANCING**

8.1 South Africa today sits with an inherited legacy of unrehabilitated mines. This is especially a great concern in the alluvial diamond mining industry. The reason therefor can be attributed to the expensiveness of mining for alluvial diamonds, the difficulty to determine that diamonds will be found from geological information which is unreliable and the unlikelihood of diamonds to be found during areas not known to be diamond bearing during mining. It is a well-known fact and can be proofed by merely conducting site visits on areas where alluvial diamond prospecting and mining activities used to be conducted that rehabilitation is not done where diamonds are not found. Mining companies do not attend to rehabilitation if they are already out of money because of the mining activities and the fact that no diamonds were found. It is thus very important that an applicant provides information about his access to financing to the interested parties and especially the surface owner. From this information the surface owner shall be in a position to determine if the Applicant is not a man of straw and if the Applicant shall be able to comply with its obligations including the obligation to rehabilitate the property after the mining

activities were stopped.

8.2 Our clients did not receive any information about the Applicant's access to financing.

8.3 The only reasonable assumption to be drawn from the non-provision of the financial information is that the Applicant does not have access to financing and that this shortcoming will be exposed if the Applicant provides the information to the interested and affected parties. This has a big effect on the competency of the Applicant and the obligation to consult with interested and affected parties. It is now impossible for the surface owner to assess the Applicant's access to financing and if the Applicant shall be in a position to comply with its obligations.

## **9. TECHNICAL COMPETENCE**

9.1 In terms of Section 23(1)(b) of the MPRDA an applicant for a mining right must show that it has access to financial resources and has the technical ability to conduct the proposed mining operations optimally in accordance with the Mine Work Programme.

9.2 We have not received a copy of the mine work programme. As far as we know, the Applicant is not the holder of any equipment and does not have the technical expertise to conduct the mining activities.

9.3 The Applicant should not be in contravention of any provision of the MPRDA.

9.4 In terms of Section 23(1)(g) of the MPRDA read with Section 23(1)(b) of the MPRDA (that the applicant should have the technical ability to conduct the proposed mining operations optimally), the application for the mining right cannot be granted to the Applicant.

9.5 The Applicant conducted prospecting operations on some of our clients' properties. The prospecting operations were not conducted in compliance with the approved prospecting work programme and the approved environmental management programme. We shall in due course provide a detailed report in this regard.

9.6 The Applicant has also not during the prospecting activities rehabilitated all the disturbances caused. This shows on the Applicant's lack of technical expertise.

9.7 We have also been advised that Section 93 instruction letters have been issued to the Applicant when the Applicant conducted its prospecting activities. This also shows that the Applicant does not have the technical expertise to conduct the mining activities. We have requested the Section 93 notices from the DMR and shall amplify our objection once we receive copies of the notices.

9.8 We have also determined that no water use licence was issued to the Applicant when the prospecting activities were conducted. The Applicant cannot be granted a mining right if it has already shown a flagrant disregard of legislation by illegally using water on the Properties. We have requested information about the water use authorities granted to the Applicant during the prospecting period.

9.9 During the prospecting activities, the Applicant damaged infrastructure of the surface owners which have not yet been repaired on date hereof. It also shows the Applicant's

lack of technical expertise.

## **10. MINING OF SAND**

10.1 There are various operations mining for sand that are being conducted in the area. The mining of sand shall be detrimental to the other business which already conducts mining activities by mining for sand. Sand on the Properties are also used for farming activities and cannot be rehabilitated. In terms of the Fuel Retailers case, the DMR must take into effect the interaction between socio economic development and the protection of the environment and other businesses.

10.2 The mining for sand cannot be conducted economically sustainable as various other sand mines are also operational in the area.

## **11. UNACCEPTABLE POLLUTION, ECOLOGICAL DEGRADATION AND DAMAGE TO THE ENVIRONMENT**

11.1 The Regional Manager can only recommend approval of an application for a mining right and the relevant authority can only grant an application for a mining right if the applicant can ensure and convince the decision makers that the mining activities will not result in unacceptable pollution, ecological degradation and damage to the environment.

11.2 It is our submission that the envisaged activities shall lead to ecological degradation, unacceptable pollution and damage to the environment.

11.3 The Applicant did not list all the listing notices which he shall have to mitigate because of the impact of the mining activities.

11.4 Jean Bellingan, one of the representatives of the surface owners was sometimes present during the prospecting activities. The representatives of the Applicant informed him that most of the alluvial gravels have been removed during the prospecting phase. The Applicant now wants to apply for a mining right for 30 years. The Applicant cannot apply for a mining right for 30 years if it has already advised that most of the gravel has been removed during the prospecting phase.

## **12. COMPENSATION FOR LOSSES AND DAMAGES**

The envisaged mining activities will result in losses and damages for our clients. Our clients must be compensated by the Applicant for these losses and damages. No proposal has been made of how our clients will be compensated.

## **13. ZONING**

The Applicant has not applied for the rezoning of the properties. It is our submission that the zoning schemes and the zoning of the properties do not allow mining activities to be conducted. As mining activities are not allowed, the areas under application will first have to be rezoned before any mining activities can be conducted.

## **14. CONCLUSION**

The Application can only be granted if the Applicant complied with all relevant legislative prescriptions. As can be seen from the above, the Applicant did not comply nor provided

proof of compliance with these legislative requirements. It is thus our submission that the decision maker cannot grant the mining right nor can he/she approve the application for the Environmental Authorization. We hold instructions to appeal against the granting of the mining right and the approval of the environmental authorization and to approach the court for urgent interim relieve until such time as our clients have exercised their legal recourses.

We kindly request that the DMR acknowledges receipt of our letter and advise us of the status of the Application and how far the BAR has been assessed and or if any recommendations has been made to the Minister and/or if any decision has been made about the granting of the mining right or approval of the EMP. Our clients’ rights are reserved to amplify this objection. As indicated above, our clients have not been provided with all the information they needs to file a detailed objection against the application for a mining right and the envisaged mining activities. We have submitted an application for access to information and shall amend our objection once we have received the information.”

Greenmined acknowledged receipt of the objection sent by Japie van Zyl Attorneys (JVZA) on 30 January 2019 and confirmed the clients objection will be responded to in due course.

JVZA required on the status of the project on 10 December 2019. Greenmined responded (11 December 2019) that the MR application was on hold since the previous correspondence was sent to JVZA, and that the registered I&AP’s will be contacted as soon as the project restarts.

Another progress enquiry was received from JVZA on 16 April 2020, to which Greenmined responded (17 April 2020) that the project was still on hold.

|   |          |   |
|---|----------|---|
| <p>Belle Rive Properties (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 0 (Remaining Extent) of Van Aswegens Hoek 493</li> <li>◆ Portion 2 (Remaining Extent) of Van Aswegens Hoek 493</li> <li>◆ Portion 4 of Van Aswegens Hoek 493</li> </ul> | <p>X</p> | <p>To date no comments were received.</p> |
| <p>Conrad &amp; Heste De Beer (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 1 (Remaining Extent) of Van Aswegens Hoek 493</li> </ul>   | <p>X</p> | <p>To date no comments were received.</p> |

**INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR**



|  |   |  |   |   |
|--|---|--|---|---|
| Dirk de Beer Trust<br>♦ Portion 6 of Van Aswegens Hoek 493   | X | To date no comments were received.   |   |   |
| <b>Lawful occupier/s of the land</b>   |   | None of the landowners identify additional lawful occupiers to be contacted. |   |   |
| -  | - | -  | - | - |
| <b>Landowners or lawful on adjacent properties</b>   | X | -  | - | - |
| Bessieslaagte Trust<br>♦ Portion 7 (Remaining Extent) of Bessies Laagte 328  | X | To date no comments were received.   |   |   |
| Mr J Smit<br>♦ Portion 0 (Remaining Extent) of Bessies Laagte 328  | X | To date no comments were received.   |   |   |
| GCT Trust<br>♦ Portion 11 (Remaining Extent) of Bloemheuvel 327<br>♦ Portion 12 (Remaining Extent) of Bloemheuvel 327<br>♦ Portion 13 of Bloemheuvel 327 | X | To date no comments were received.   |   |   |

**INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR**



|  |          |   |
|--|----------|---|
| <p>Mr SH Keyser</p> <p>◆ Portion 14 (Remaining Extent) of Bloemheuvél 327</p>      | <p>X</p> | <p>To date no comments were received.</p> |
| <p>Mr FW Keyser</p> <p>◆ Portion 15 (Remaining Extent) of Bloemheuvél 327</p>      | <p>X</p> | <p>To date no comments were received.</p> |
| <p>Bloemheuvél Trust</p> <p>◆ Portion 16 (Remaining Extent) of Bloemheuvél 327</p> | <p>X</p> | <p>To date no comments were received.</p> |
| <p>Mr PCF Swiegers</p> <p>◆ Portion 3 (Remaining Extent) of Bloemheuvél 327</p>    | <p>X</p> | <p>To date no comments were received.</p> |
| <p>Mr JP Sonnenberg</p> <p>◆ Portion 0 (Remaining Extent) of Diamant 631</p>       | <p>X</p> | <p>To date no comments were received.</p> |
| <p>Clisa 83 (Pty) Ltd</p>  | <p>X</p> | <p>To date no comments were received.</p> |



**INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR**



|   |   |                                    |
|---|---|------------------------------------|
| <ul style="list-style-type: none"> <li>◆ Portion 6 of Diamant 631</li> <li>◆ Portion 12 of Diamant 631</li> <li>◆ Portion 13 (Remaining Extent) of Diamant 631</li> </ul>   |   |                                    |
| <p>Graven Wild (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 7 of the farm Diamant 631</li> </ul>  | X | To date no comments were received. |
| <p>Michiel van de Venter Testamentêre Trust</p> <ul style="list-style-type: none"> <li>◆ Portion 0 (Remaining Extent) of Kalkput 460</li> </ul>                             | X | To date no comments were received. |
| <p>Mr S de Beer</p> <ul style="list-style-type: none"> <li>◆ Portion 1 of Kalkput 460</li> </ul>  | X | To date no comments were received. |
| <p>Leeuheuwel Boerdery (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 2 (Remaining Extent) of Overshot 496</li> <li>◆ Portion 1 of Pontplaas 664</li> </ul> | X | To date no comments were received. |
| <p>Pontriver Farming (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 0 (Remaining Extent) of Pontplaas 664</li> </ul>  | X | To date no comments were received. |

|  |   |   |  |
|--|---|---|--|
|  |   |   |  |
| <b>Municipal councillor</b><br>Ward 4  | X | To date no comments were received.  |  |
| <b>Municipality</b><br>Tokologo Local Municipality   | X | To date no comments were received.  |  |
| <b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc</b> | X | -   | -  |
| Department of Police, Roads and Transport  | X | To date no comments were received.  |  |
| Eskom  | X | To date no comments were received.  |  |
| Department of Water and Sanitation   | X | To date no comments were received.  |  |
| Department of Public Works and Infrastructure  | X | To date no comments were received.  |  |
| <b>Communities</b>   |   | No communities border the proposed mining area or were identified within 100 m from the site. |  |
| <b>Dept. Land Affairs</b>  | X | 05 November 2018  | A request was sent to the Department of Land Affairs to confirm whether a land claim was registered over any of the earmarked properties. As no response was received from the Department of Land Affairs, this request was resent on 17 January 2019. Response is still awaited and the matter will be followed-up. |
| -  | - | -   | -  |

**INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR**



|   |   |  |   |   |
|---|---|--|---|---|
| <b>Traditional Leaders</b>  |   | No tradition leaders borders the proposed mining area or were identified within 100 m from the site. |   |   |
| <b>Dept. Environmental Affairs</b>  | X | -  |   |   |
| Department of Economic Small Business Development, Tourism and Environmental Affairs. | X | To date no comments were received.   |   |   |
| <b>Other Competent Authorities affected</b>   |   | -  | - | - |
| Department of Agriculture and Rural Development – FS                                  | X | To date no comments were received.   |   |   |
| Department of Labour  | X | To date no comments were received.   |   |   |
| Lekwa-Teemane Local Municipality  | X | To date no comments were received.   |   |   |
| Lejweleputswa District Municipality   | X | To date no comments were received.   |   |   |
| South African Heritage Resources Agency (SAHRA)                                       | X | To date no comments were received.   |   |   |
| <b><u>OTHER AFFECTED PARTIES</u></b>  |   | -  | - | - |
| -   |   | -  | - | - |
| <b><u>INTERESTED PARTIES</u></b>  |   | -  | - | - |
|   |   |  |   |   |

Table 11: Summary of issues raised by I&AP's and stakeholders during DSR.

| Interested and Affected Parties  |          | Date Comments Received | Issues raised  | EAP's response to issues raised by the Applicant  |
|--|----------|------------------------|--|---|
| List the names of persons consulted in this column, and<br>Mark with an X where those must be consulted were in fact consulted |          |                        |  |   |
| <b>AFFECTED PARTIES</b>  |          | -                      | -  | -   |
| <b>Landowner/s</b>   | <b>X</b> | -                      | -  | -   |
| Dimension Grains CC<br><br>♦ Portion 0 (Remaining Extent) of Greylingslyn 355  | X        | 6 August 2021          | <p>Ons boerdery se naam is Kamellott Pty Ltd. Die aansoek is teen Greylingslyn en ons versoek om deel te wees van die vergadering op 12 Augustus 2021.</p> <p>Ons sal ook graag n individuele vergadering wil bele met u. Tyd en plek kan later bevestig word.</p> <p><b><u>Translated for review purposes:</u></b></p> <p>Our farm's name is Kamellott Pty Ltd. The application is against Greylingslyn and we request to be part of the meeting on 12 August 2021.</p> <p>We would also like to convene an individual meeting with you. Time and place can be confirmed later.</p> | <p>Goeie dag,</p> <p>Hiermee bevestiging dat Ian en Hettie Delpont geregistreer is vir die publieke vergadering soos versoek.</p> <p><b><u>Translated for review purposes</u></b></p> <p>Good day,</p> <p>Hereby confirmation that Ian and Hettie Delpont are registered for the public meeting as requested.</p>   |
|  |          | 10 August 2021         |  | <p>Dear registered I&amp;APs</p> <p><b>MINING RIGHT APPLICATION IIP 84 - FS 30/5/1/2/2/10067 / IIP 99 - FS 30/5/1/2/2/10066 MR PUBLIC MEETING</b></p> <p>1. Please find herewith the Zoom link to the <b>Virtual Public Participation Meeting</b> to be held on <b>Thursday 12 August 2021 at 10:00 AM</b> to discuss the <b>MINING RIGHT APPLICATIONS IIP 84 - FS 30/5/1/2/2/10067 / IIP 99 - FS</b></p> |



|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  | <p style="text-align: right;"><b>30/5/1/2/2/10066</b></p> <p><b><u>Date: Thursday 12 August 2021</u></b></p> <p><b><u>Time: 10h00</u></b></p> <p><b>Topic: Public Meeting to discuss the Mining Right Applications IIP 84 - FS 30/5/1/2/2/10067 and IIP 99 - FS 30/5/1/2/2/10066</b></p> <p>Join Zoom Meeting<br/> <a href="https://raubex.zoom.us/j/97423303278">https://raubex.zoom.us/j/97423303278</a></p> <p>Meeting ID: 974 2330 3278<br/>                 One tap mobile<br/>                 +27875503946,,97423303278# South Africa<br/>                 +27875517702,,97423303278# South Africa</p> <p><b>2. <u>Please ensure</u></b></p> <p>2.1 You are online and connected 5 minutes before the meeting starts.</p> <p>2.2 You have the most recent version of Zoom, as with an older version you may have connection or audio/video issues and be unable to participate effectively or at all.</p> <p>2.3 That the device you are logging in with has a <u>registered name</u> to permit access.</p> <p><b>3.</b> If you are experiencing problems on the day, please be kind enough to send a message via <b>WHATSAPP to 084 585 5706</b>, as we will be unable to take calls while administering a meeting.</p> <p>We thank you in advance for your cooperation, and look forward to interacting with you.</p> |
|--|--|--|--|--|



|  |          |                      |  |  |
|--|----------|----------------------|--|--|
| <p>FJ Bellingan Trust</p> <p>◆ Portion 1 of Greylingslyn 355</p>   | <p>X</p> | <p>6 August 2021</p> | <p>Our reference: Japie van Zyl / Charmaine / MAH111/MAT8941</p> <p>Your reference : DSR IIP 84 – FS30/5/1/2/2/10067MR</p> <p>Me Marlene Lingenfelder<br/>Greenmined Environmental<br/>Somerset West</p> <p>Good day Madam</p> <p>We refer to your e-mail dated 22 July 2021.</p> <p>We confirm that we act on behalf of:</p> <p>1. the Trustees of the FJ Bellingan Trust, (Reg. nr.: IT569/2007). Our client is surface owner of Portion 1 of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 212.9167 hectares, held under Title Deed: T13717/2013, Representative: Mr Jean Bellingan;</p> <p>Dimension Grains CC, (Reg. nr.: 2001/080724/23), who is the owner of the Remaining Extent of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 133.9079 hectares, held under Title Deed: T16694/2007, Representative: Mr Ian Delpport;</p> <p>Seriso 654 (Pty) Ltd, (Reg. nr.: 2005/023522/07), who is the owner of Portion 2 of the farm Greylingslyn 355, Registration Division: Boshof, Free State Province, Extent: 816.2202 hectares, held under Title Deed: T11965/2014, Representative: Mr Louis Claassen;</p> <p>Our clients hereby register as interested and affected parties.</p> <p>We will represent our clients during the virtual public participation meeting on 12 August 2021. Please provide us with the details of the meeting.</p> | <p>Dear registered I&amp;APs</p> <p><b>MINING RIGHT APPLICATION IIP 84 - FS 30/5/1/2/2/10067 / IIP 99 - FS 30/5/1/2/2/10066 MR PUBLIC MEETING</b></p> <p>1. Please find herewith the Zoom link to the <b>Virtual Public Participation Meeting</b> to be held on <b>Thursday 12 August 2021 at 10:00 AM</b> to discuss the <b>MINING RIGHT APPLICATIONS IIP 84 - FS 30/5/1/2/2/10067 / IIP 99 - FS 30/5/1/2/2/10066</b></p> <p><b><u>Date: Thursday 12 August 2021</u></b></p> <p><b><u>Time: 10h00</u></b></p> <p><b>Topic: Public Meeting to discuss the Mining Right Applications IIP 84 - FS 30/5/1/2/2/10067 and IIP 99 - FS 30/5/1/2/2/10066</b></p> <p>Join Zoom Meeting<br/><a href="https://raubex.zoom.us/j/97423303278">https://raubex.zoom.us/j/97423303278</a></p> <p>Meeting ID: 974 2330 3278<br/>One tap mobile<br/>+27875503946,,97423303278# South Africa<br/>+27875517702,,97423303278# South Africa</p> <p><b>2. <u>Please ensure</u></b></p> <p>2.1 You are online and connected 5 minutes before the meeting starts.</p> <p>2.2 You have the most recent version of Zoom, as with an older version you may have connection or audio/video issues and be unable to participate</p> |
| <p>Seriso 654 (Pty) Ltd</p> <p>◆ Portion 2 of Greylingslyn 355</p> | <p>X</p> |                      |  |  |

|   |   |  |   |  |
|---|---|--|---|--|
|   |   |  |   | effectively or at all.<br><br>2.3 That the device you are logging in with has a <u>registered name</u> to permit access.<br><br>3. If you are experiencing problems on the day, please be kind enough to send a message via <b>WHATSAPP to 084 585 5706</b> , as we will be unable to take calls while administering a meeting.<br><br>We thank you in advance for your cooperation, and look forward to interacting with you. |
| Belle Rive Properties (Pty) Ltd<br><br>◆ Portion 0 (Remaining Extent) of Van Aswegens Hoek 493<br>◆ Portion 2 (Remaining Extent) of Van Aswegens Hoek 493<br>◆ Portion 4 of Van Aswegens Hoek 493 | X | To date no comments were received.   |   |  |
| Conrad & Heste De Beer (Pty) Ltd<br><br>◆ Portion 1 (Remaining Extent) of Van Aswegens Hoek 493   | X | To date no comments were received.   |   |  |
| Dirk de Beer Trust<br><br>◆ Portion 6 of Van Aswegens Hoek 493  | X | To date no comments were received.   |   |  |
| <b>Lawful occupier/s of the land</b>  |   | None of the landowners identify additional lawful occupiers to be contacted. |   |  |
| -   | - | -  | - | -  |

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| Landowners or lawful on adjacent properties  | X | -                                  | -                          | - |
|--|---|------------------------------------|----------------------------|---|
| Bessieslaagte Trust<br><br>♦ Portion 7 (Remaining Extent) of Bessies Laagte 328  | X | 19 October 2021                    | We OBJECT the application. |   |
| Mr J Smit<br><br>♦ Portion 0 (Remaining Extent) of Bessies Laagte 328  | X | To date no comments were received. |                            |   |
| GCT Trust<br><br>♦ Portion 11 (Remaining Extent) of Bloemheuvél 327<br>♦ Portion 12 (Remaining Extent) of Bloemheuvél 327<br>♦ Portion 13 of Bloemheuvél 327 | X | To date no comments were received. |                            |   |
| Mr SH Keyser<br><br>♦ Portion 14 (Remaining Extent) of Bloemheuvél 327   | X | To date no comments were received. |                            |   |
| Mr FW Keyser<br><br>♦ Portion 15 (Remaining Extent) of Bloemheuvél 327   | X | To date no comments were received. |                            |   |
| Bloemheuvél Trust  | X | To date no comments were received. |                            |   |



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|   |   |                                    |
|---|---|------------------------------------|
| <ul style="list-style-type: none"> <li>◆ Portion 16 (Remaining Extent) of Bloemheuvel 327</li> </ul>  |   |                                    |
| <p>Mr PCF Swiegers</p> <ul style="list-style-type: none"> <li>◆ Portion 3 (Remaining Extent) of Bloemheuvel 327</li> </ul>  | X | To date no comments were received. |
| <p>Mr JP Sonnenberg</p> <ul style="list-style-type: none"> <li>◆ Portion 0 (Remaining Extent) of Diamant 631</li> </ul>   | X | To date no comments were received. |
| <p>Clisa 83 (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 6 of Diamant 631</li> <li>◆ Portion 12 of Diamant 631</li> <li>◆ Portion 13 (Remaining Extent) of Diamant 631</li> </ul> | X | To date no comments were received. |
| <p>Graven Wild (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 7 of the farm Diamant 631</li> </ul>  | X | To date no comments were received. |
| <p>Michiel van de Venter Testamentêre Trust</p> <ul style="list-style-type: none"> <li>◆ Portion 0 (Remaining Extent) of Kalkput 460</li> </ul>   | X | To date no comments were received. |

|  |   |   |   |   |
|--|---|---|---|---|
| Mr S de Beer   |   | To date no comments were received.  |   |   |
| ◆ Portion 1 of Kalkput 460   | X |   |   |   |
| Leeuheuvel Boerdery (Pty) Ltd  |   | Na aanleiding van die vergadering wat geskeduleer is vir 12 Augustus 2021, wil ek net asb nms JF van der Merwe, Schalk van der Merwe en Henno van der Merwe, vir jou inkennis stel dat hulle al drie wel die vergadering sal bywoon. Graag wil hulle ook 'n afsonderlike afspraak reël. Sal jy my asb kan laatweet vir 'n geskikte datum en tyd wat julle pas? Sodat ek dit aan hulle kan oordra?<br>Sal jy asb so gaaf wees om op die epos te bevestig en terugvoering te gee dat jy wel kennis dra van die inligting hier genoem? |   |   |
| ◆ Portion 2 (Remaining Extent) of Overschot 496  | X | <b>Translated for review purposes:</b>  |   |   |
| ◆ Portion 1 of Pontplaas 664   |   | With reference to the meeting scheduled for 12 August 2021, I would just like to inform you on behalf of JF van der Merwe, Schalk van der Merwe and Henno van der Merwe that all three of them will attend the meeting.<br>They would also like to arrange a separate appointment. Would you please let me know for a suitable date and time that suits you? So I can pass it on to them?<br>Would you please be so kind as to confirm on the email and give feedback that you do have knowledge of the information mentioned here? |   |   |
| Greenmined Response  |   |   |   |   |
| Pontriver Farming (Pty) Ltd  |   | To date no comments were received.  |   |   |
| ◆ Portion 0 (Remaining Extent) of Pontplaas 664  | X |   |   |   |
| <b>Municipal councillor</b><br>Ward 4  | X | To date no comments were received.  |   |   |
| <b>Municipality</b><br>Tokologo Local Municipality   | X | To date no comments were received.  |   |   |
| <b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom,</b> | X | -   | - | - |

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|   |          |   |   |   |
|---|----------|---|---|---|
| <b>DWA etc</b>  |          |   |   |   |
| Department of Police, Roads and Transport   | X        | To date no comments were received.  |   |   |
| Eskom   | X        | To date no comments were received.  |   |   |
| Department of Water and Sanitation  | X        | To date no comments were received.  |   |   |
| Department of Public Works and Infrastructure   | X        | To date no comments were received.  |   |   |
| <b>Communities</b>  |          | No communities border the proposed mining area or were identified within 100 m from the site.   |   |   |
| -   | -        | -   | - | - |
| <b>Dept. Land Affairs</b>   | <b>X</b> |   |   |   |
| -   | -        | -   | - | - |
| <b>Traditional Leaders</b>  |          | No tradition leaders borders the proposed mining area or were identified within 100 m from the site.  |   |   |
| -   | -        | -   | - | - |
| <b>Dept. Environmental Affairs</b>  | <b>X</b> | -   |   |   |
| Department of Economic Small Business Development, Tourism and Environmental Affairs. | X        | To date no comments were received.  |   |   |
| <b>Other Competent Authorities affected</b>   |          | -   | - | - |
| Department of Agriculture and Rural Development – FS                                  | X        | To date no comments were received.  |   |   |
| Department of Labour  | X        | To date no comments were received.  |   |   |
| Lekwa-Teemane Local Municipality  | X        | To date no comments were received.  |   |   |
| Lejweleputswa District Municipality   | X        | To date no comments were received.  |   |   |
| South African Heritage Resources Agency (SAHRA)                                       | X        | <p>Interim Comment</p> <p>It is noted that a desktop HIA inclusive of a Palaeontological Impact Assessment (PIA) will be undertaken during the Environmental Impact Assessment (EIA) phase.</p> <p>The archaeological component of the HIA should follow the SAHRA 2007 Minimum Standards: Archaeological Component of Impact Assessment Report. The quickest process to follow for the archaeological component would be to contract a qualified archaeologist (see <a href="http://www.asapa.co.za">www.asapa.co.za</a> or <a href="http://www.aphp.org.za">www.aphp.org.za</a>).</p> <p>The desktop PIA must be undertaken by a qualified palaeontologist (See <a href="http://www.palaeosa.org/heritage-practitioners.html">www.palaeosa.org/heritage-practitioners.html</a> for a list of qualified palaeontologists). The report must comply with the</p> |   |   |

|                               |   |  |   |
|-------------------------------|---|--|---|
|                               |   | 2012 Minimum Standards: Palaeontological Components of Heritage Impact Assessments.<br>Further comments will be issued upon submission of the HIA and the draft EIA inclusive of appendices.<br>Should you have any further queries, please contact the designated official using the case number quoted above in the case header. |   |
| <b>OTHER AFFECTED PARTIES</b> | - | -  | - |
| -                             | - | -  | - |
| <b>INTERESTED PARTIES</b>     | - | -  | - |

Table 12: Summary of issues raised by I&AP's and stakeholders during DEIAR.

| Interested and Affected Parties  |          | Date Comments Received            | Issues raised | EAP's response to issues raised by the Applicant |
|--|----------|-----------------------------------|---------------|--|
| List the names of persons consulted in this column, and<br>Mark with an X where those must be consulted were in fact consulted |          |                                   |               |  |
| <b>AFFECTED PARTIES</b>  |          | -                                 | -             | -  |
| <b>Landowner/s</b>   | <b>X</b> | -                                 | -             | -  |
| Dimension Grains CC<br>♦ Portion 0 (Remaining Extent) of Greylingslyn 355  | X        | No further comments were received |               |  |
| FJ Bellingan Trust<br>♦ Portion 1 of Greylingslyn 355  | X        | No further comments were received |               |  |
| Seriso 654 (Pty) Ltd<br>♦ Portion 2 of Greylingslyn 355  | X        |                                   |               |  |

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|   |   |  |   |   |
|---|---|--|---|---|
| Belle Rive Properties (Pty) Ltd<br><br>♦ Portion 0 (Remaining Extent) of Van Aswegens Hoek 493<br>♦ Portion 2 (Remaining Extent) of Van Aswegens Hoek 493<br>♦ Portion 4 of Van Aswegens Hoek 493 | X | To date no comments were received.   |   |   |
| Conrad & Heste De Beer (Pty) Ltd<br><br>♦ Portion 1 (Remaining Extent) of Van Aswegens Hoek 493   | X | To date no comments were received.   |   |   |
| Dirk de Beer Trust<br><br>♦ Portion 6 of Van Aswegens Hoek 493  | X | To date no comments were received.   |   |   |
| <b>Lawful occupier/s of the land</b>  |   | None of the landowners identify additional lawful occupiers to be contacted. |   |   |
| -   | - | -  | - | - |
| <b>Landowners or lawful on adjacent properties</b>  | X | -  | - | - |
| Bessieslaagte Trust<br><br>♦ Portion 7 (Remaining Extent) of Bessies Laagte 328   | X | No further comments were received  |   |   |
| Mr J Smit<br><br>♦ Portion 0 (Remaining Extent) of  | X | To date no comments were received.   |   |   |

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|  |   |                                    |
|--|---|------------------------------------|
| Bessies Laagte 328   |   |                                    |
| GCT Trust<br><br><ul style="list-style-type: none"> <li>◆ Portion 11 (Remaining Extent) of Bloemheuvel 327</li> <li>◆ Portion 12 (Remaining Extent) of Bloemheuvel 327</li> <li>◆ Portion 13 of Bloemheuvel 327</li> </ul> | X | To date no comments were received. |
| Mr SH Keyser<br><br><ul style="list-style-type: none"> <li>◆ Portion 14 (Remaining Extent) of Bloemheuvel 327</li> </ul>   | X | To date no comments were received. |
| Mr FW Keyser<br><br><ul style="list-style-type: none"> <li>◆ Portion 15 (Remaining Extent) of Bloemheuvel 327</li> </ul>   | X | To date no comments were received. |
| Bloemheuvel Trust<br><br><ul style="list-style-type: none"> <li>◆ Portion 16 (Remaining Extent) of Bloemheuvel 327</li> </ul>  | X | To date no comments were received. |
| Mr PCF Swiegers<br><br><ul style="list-style-type: none"> <li>◆ Portion 3 (Remaining Extent) of Bloemheuvel 327</li> </ul>   | X | To date no comments were received. |
| Mr JP Sonnenberg   | X | To date no comments were received. |

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|   |   |                                    |
|---|---|------------------------------------|
| <ul style="list-style-type: none"> <li>◆ Portion 0 (Remaining Extent) of Diamant 631</li> </ul>   |   |                                    |
| <p>Clisa 83 (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 6 of Diamant 631</li> <li>◆ Portion 12 of Diamant 631</li> <li>◆ Portion 13 (Remaining Extent) of Diamant 631</li> </ul> | X | To date no comments were received. |
| <p>Graven Wild (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 7 of the farm Diamant 631</li> </ul>  | X | To date no comments were received. |
| <p>Michiel van de Venter Testamentêre Trust</p> <ul style="list-style-type: none"> <li>◆ Portion 0 (Remaining Extent) of Kalkput 460</li> </ul>   | X | To date no comments were received. |
| <p>Mr S de Beer</p> <ul style="list-style-type: none"> <li>◆ Portion 1 of Kalkput 460</li> </ul>  | X | To date no comments were received. |
| <p>Leeuheuwel Boerdery (Pty) Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 2 (Remaining Extent) of Overschot 496</li> <li>◆ Portion 1 of Pontplaas 664</li> </ul>                        | X | No further comments were received  |

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|  |   |  |   |   |
|--|---|--|---|---|
| Pontriver Farming (Pty) Ltd  |   | To date no comments were received.   |   |   |
| ♦ Portion 0 (Remaining Extent) of Pontplaas 664  | X |  |   |   |
| <b>Municipal councillor</b><br>Ward 4  | X | To date no comments were received.   |   |   |
| <b>Municipality</b><br>Tokologo Local Municipality   | X | To date no comments were received.   |   |   |
| <b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc</b> | X | -  | - | - |
| Department of Police, Roads and Transport  | X | To date no comments were received.   |   |   |
| Eskom  | X | To date no comments were received.   |   |   |
| Department of Water and Sanitation   | X | To date no comments were received.   |   |   |
| Department of Public Works and Infrastructure  | X | To date no comments were received.   |   |   |
| <b>Communities</b>   |   | No communities border the proposed mining area or were identified within 100 m from the site.        |   |   |
| -  | - | -  | - | - |
| <b>Dept. Land Affairs</b>  | X |  |   |   |
| -  | - | -  | - | - |
| <b>Traditional Leaders</b>   |   | No tradition leaders borders the proposed mining area or were identified within 100 m from the site. |   |   |
| -  | - | -  | - | - |
| <b>Dept. Environmental Affairs</b>   | X | -  |   |   |
| Department of Economic Small Business Development, Tourism and Environmental Affairs.                                | X | To date no comments were received.   |   |   |
| <b>Other Competent Authorities affected</b>  |   | -  | - | - |



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|  |   |  |   |   |
|--|---|--|---|---|
| Department of Agriculture and Rural Development – FS | X | To date no comments were received.     |   |   |
| Department of Labour                                 | X | To date no comments were received.     |   |   |
| Lekwa-Teemane Local Municipality                     | X | To date no comments were received.     |   |   |
| Lejweleputswa District Municipality                  | X | To date no comments were received.     |   |   |
| South African Heritage Resources Agency (SAHRA)      | X | No further comments were received<br>. |   |   |
| <b><u>OTHER AFFECTED PARTIES</u></b>                 |   | -                                      | - | - |
| -  |   | -                                      | - | - |
| <b><u>INTERESTED PARTIES</u></b>                     |   | -                                      | - | - |

**iv) The Environmental attributes associated with the development footprint alternatives.**

(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

**(1) Baseline Environment**

**(a) Type of environment affected by the proposed activity.**

(Its current geographical, physical, biological socio-economic, and cultural character).

This section describes the pre-mining (in terms of the proposed mining area) biophysical-, cultural- and socio-economic environment of the larger study area.

**PHYSICAL ENVIRONMENT**

**CLIMATE**

Boshof normally receives about 301 mm of rain per year, with most rainfall occurring mainly during summer. The chart below (lower left) shows the average rainfall values for Boshof per month. It receives the lowest rainfall (0 mm) in July and the highest (54 mm) in March. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Boshof range from 17.4°C in June to 31°C in January. The region is the coldest during July when the mercury drops to 0°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures. Information obtained from SA Explorer.

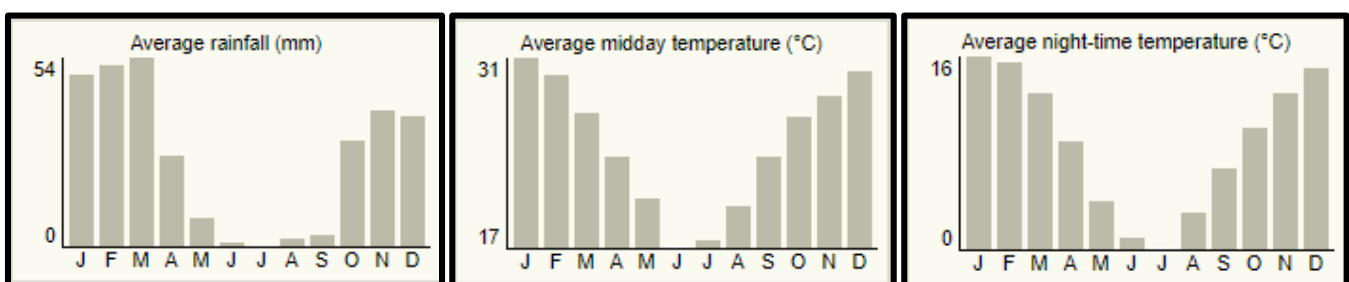


Figure 5: Charts showing the climatic averages of the Boshoff area (image obtained from SAExplorer).

**TOPOGRAPHY**

The topography of the study area is known to be flat supporting riparian thickets, accompanied by seasonally flooded grasslands and disturbed herblands often dominated by alien plants without distinct topographic features. The majority of the study area lies at an elevation of >1200 m above mean sea-level (mamsl), except along the

lower reaches of the Vaal River, where the elevation declines to ±1198 mamsl. Elevation gradually increases in a south-easterly direction as one moves away from the riverbed.

**GEOLOGY AND SOILS**

The geology of the Boshof area belongs to the Kalahari Group, with aolin sand. The diamond fields of the study area are broadly underlain by Ventersdorp lavas or Dwyka and Ecca Group shales and conglomerates. Two types of gravels have been identified in the study area, namely the Rooikoppie gravels and the Terraced alluvial gravel within the valleys which may be calcretised.

Both the palaeo and modern rivers within the study area were formed on a floor of eroded Ventersdorp lavas of the Allanridge Andesite Formation and all flow southwards due to Late Pliocene uplift of the Griqualand-Transvaal Axis into the Vaal system.

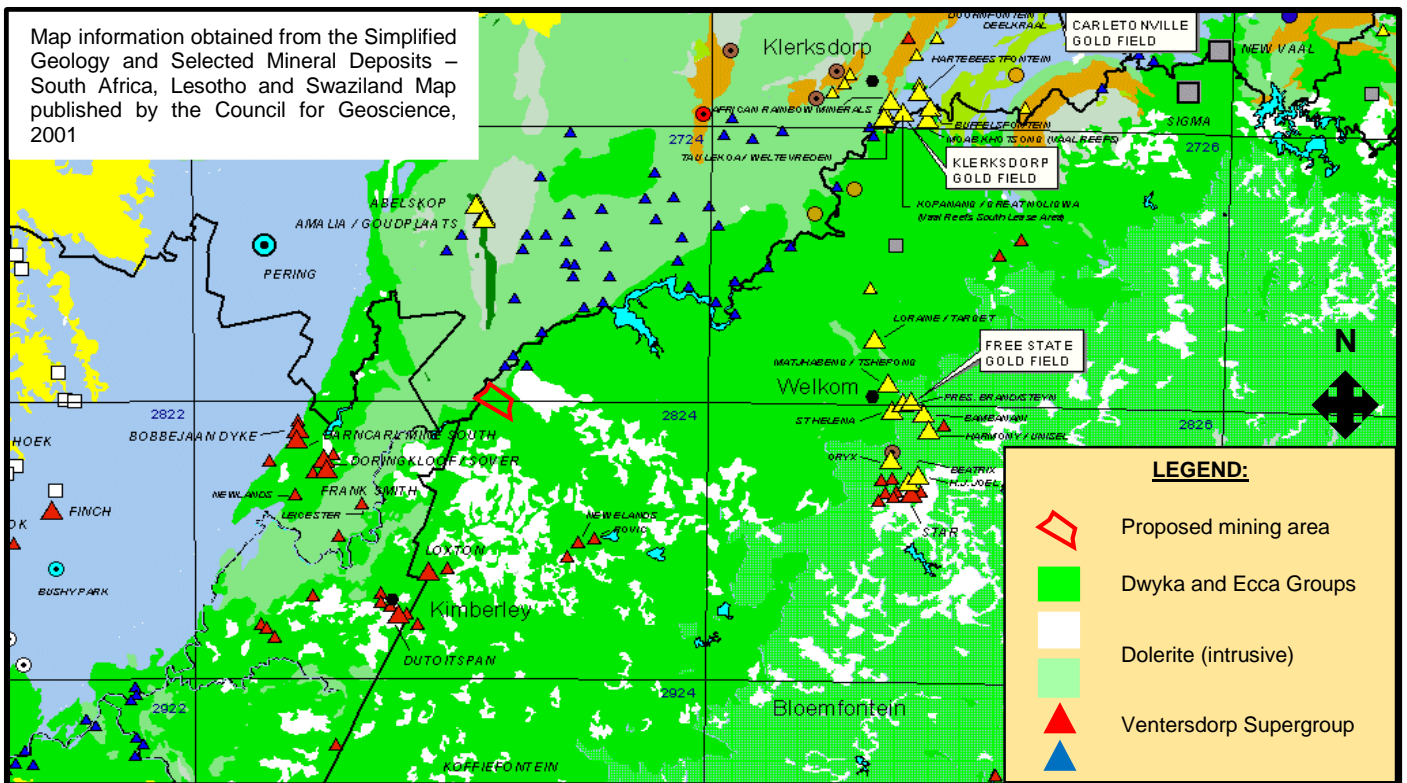


Figure 6: Indication of the simplified geology of the study area as obtained from the Council of Geoscience.

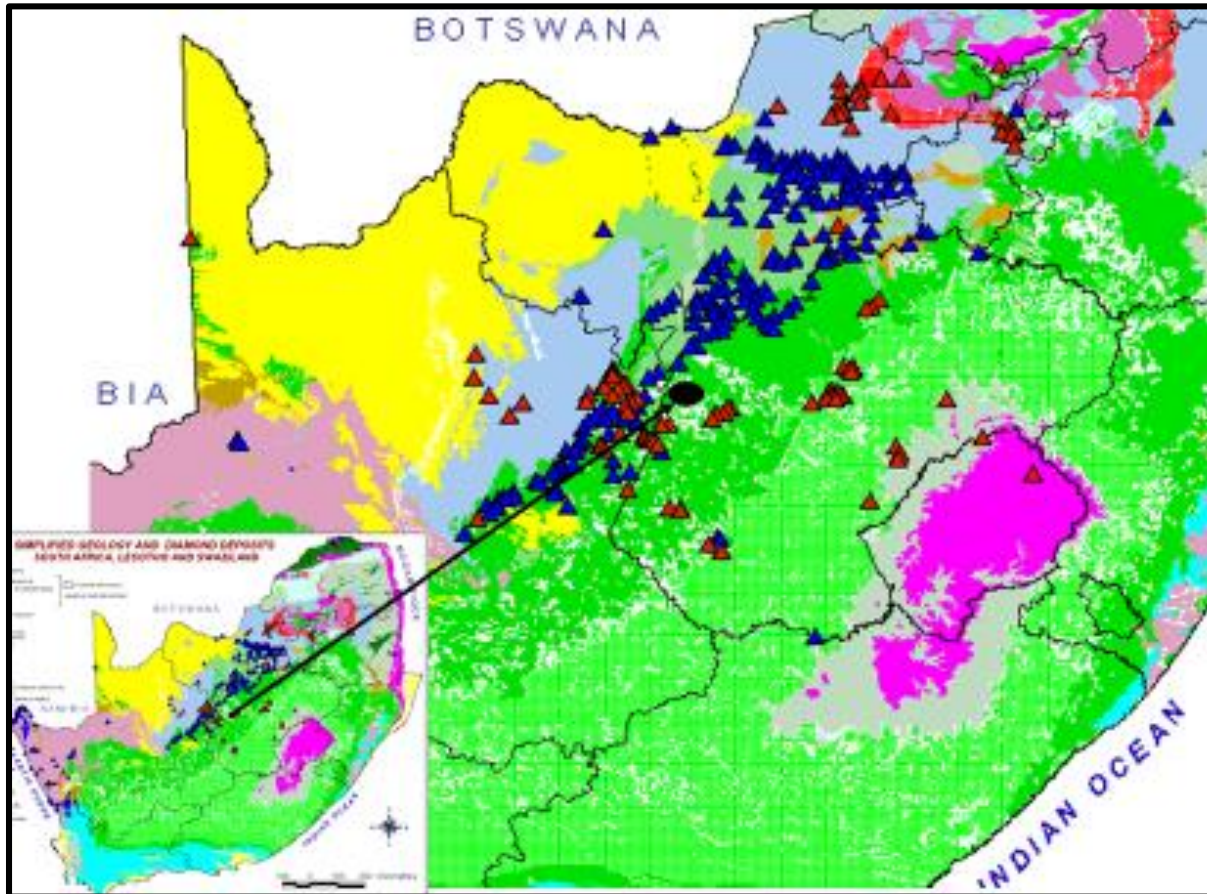


Figure 7: Map showing the alluvial diamond (blue triangle) and diamond in kimberlite (red triangle) resources within the study area.

## HYDROLOGY

(Information extracted from: 1. *Internal Strategic Perspective: Lower Vaal Water Management Area (WMA No. 10)*, Department of Water Affairs and Forestry, 2004. 2. *Classification of Significant Water Resources (River Wetlands, Groundwater and Lakes) in the Upper, Middle and Lower Vaal Water Management Areas (WMA) 8, 9, 10: Management Classes of the Vaal River Catchment Report*, Department of Water Affairs, 2012)

The proposed mining area stretches inland from the east, south-eastern bank of the Vaal River (Free State Province), and is located within the Lower Vaal Water Management Area (WMA No. 10) and the Vaal Downstream/Bloemhof Sub Water Management Area.

The water use in WMA No. 10 is dominated by irrigation, which represents 80% of the local requirements for water. According to the *Internal Strategic Perspective for the Lower Vaal Management Area (IPS: Lower Vaal WMA)* as compiled by the Department of Water and Sanitation (then Department of Water Affairs and Forestry) in 2004,  $\pm 12\%$  of the requirements is for urban and industrial use, 7% for rural domestic supplies and stock watering, and the remainder for mining purposes.

The water quality within the WMA varies from poor in the highly developed areas to good in the less developed areas. The water quality is impacted on by point discharges from

industries, wastewater treatment works, mine dewatering, irrigation return flows and diffuse sources such as runoff from mining and industrial complexes, agriculture and urban areas (IPS: Lower Vaal WMA 2004).

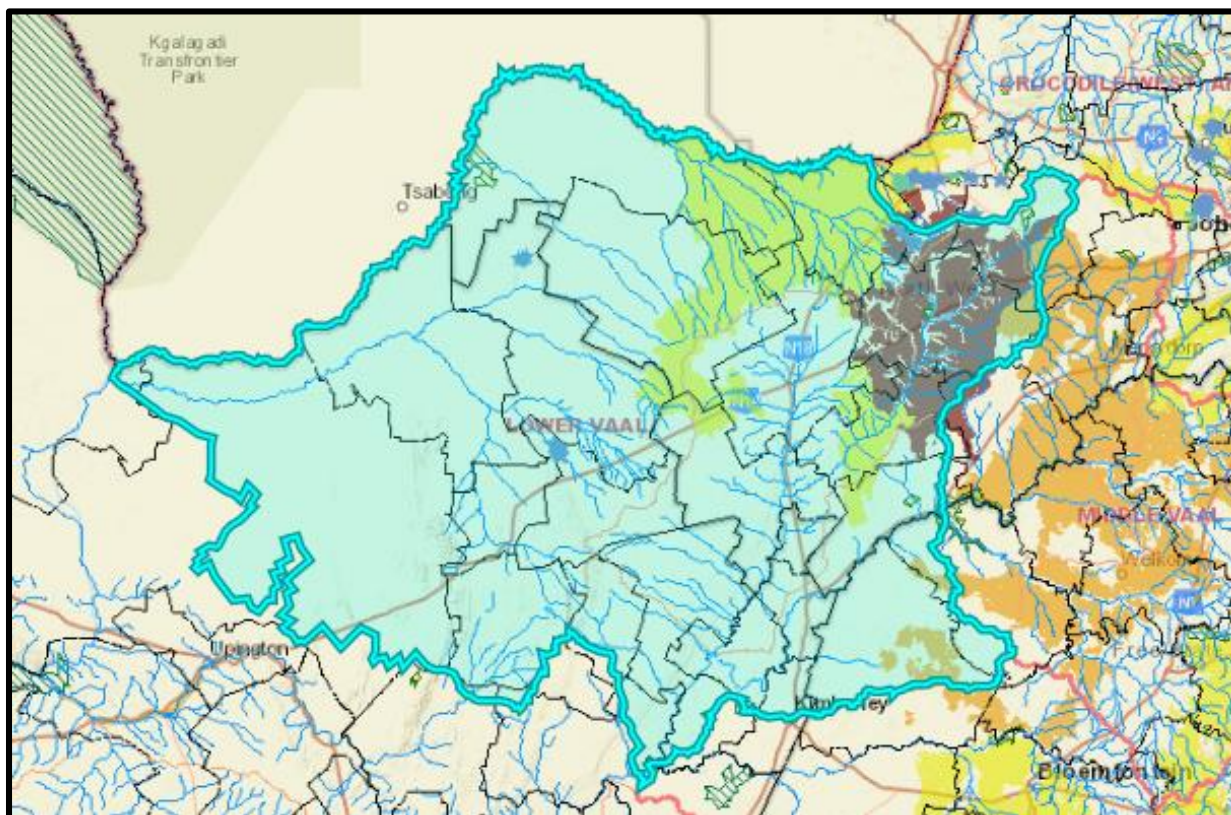


Figure 8: Map showing the location of the Lower Vaal Water Management Area (WMA No. 10) (blue polygon) (Image obtained from BGIS Map Viewer – National Wetlands and NFEPA).

The Vaal River downstream of Bloemhof Dam serves as a conveyance conduit to supply water for irrigation and urban use in the lower reaches of the Vaal River (Kimberley, Christiana, Warrenton, Windsorton, Barkly West and Delpportshoop). Outside the riparian zone, dryland commercial agriculture is the prominent land-use in the subWMA.

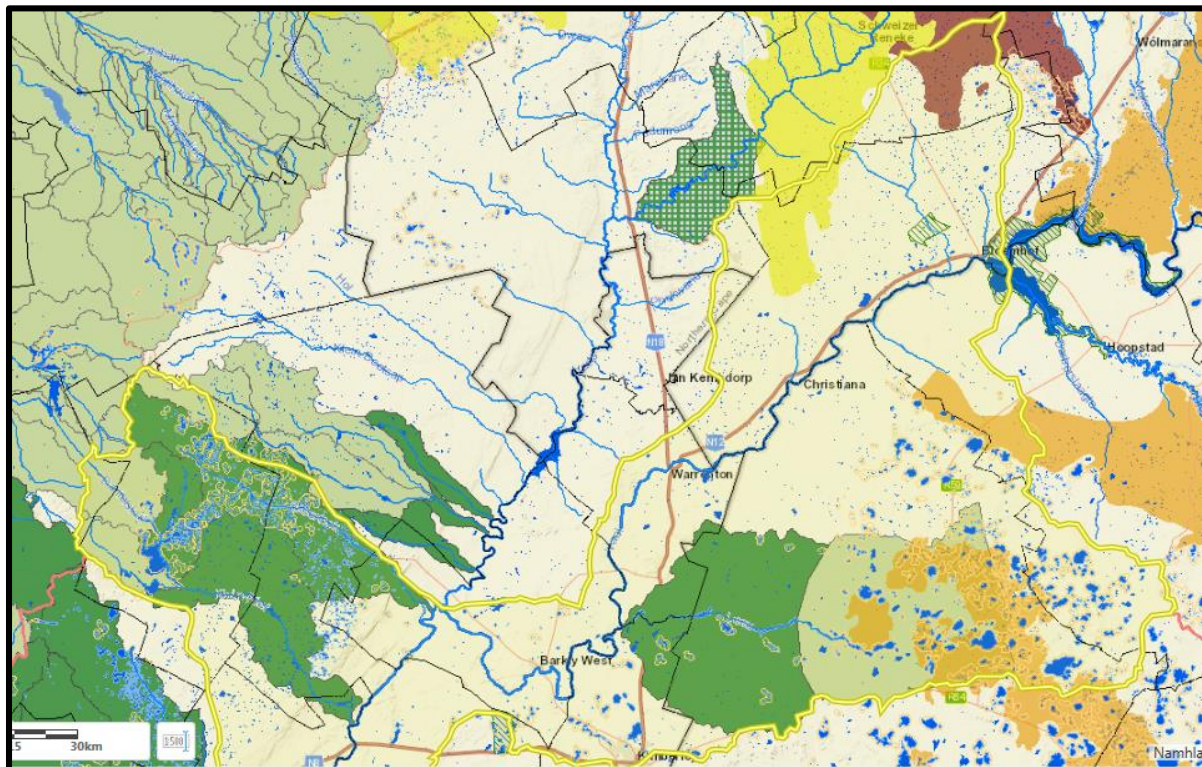


Figure 9: Map showing the location of the Vaal Downstream/Bloemhof Sub Water Management Area (WMA No. 10) (yellow polygon) (Image obtained from BGIS Map Viewer – National Wetlands and NFEPA).

## AIR QUALITY AND NOISE AMBIANCE

The air and noise ambiance of the study area was historically representative of an agricultural environment in which farming equipment operates with occasional dust emissions from denuded areas. The agricultural use of the study area intensified over years, and current land uses include crop production supported by centre-pivot irrigation, orchards, dryland farming, game and livestock farming, diamond mining, and tourism, all of which contribute to the atmospheric quality and noise ambiance of the study area. A surfaced public road, turning from the R708, cross the proposed mining area, and will be used as main access road. This road follows the Vaal River in a south-western direction.

## BIOLOGICAL ENVIRONMENT

### GROUNDCOVER

The proposed site falls within the Savanna Biome. It was established that the following vegetation types, as classified by Mucina and Rutherford (2006), are present, alternatively may be present within the study area:

- Kimberley Thornveld (SVk 4); and
- Highveld Alluvial Vegetation (AZa5).



Figure 10: Vegetation types over which the proposed mining area extends. Where the light purple indicates Highveld Alluvial Vegetation (AZa5); and brown shows Kimberley Thornveld (SVk4) (Image obtained from BGIS Map Viewer – National Wetlands and NFEPA).

#### Kimberley Thornveld (SVk4):

Kimberley Thornveld (SVk 4) is characterised by plains, often slightly irregular, with a well-developed tree layer of *Acacia erioloba*, *A. tortilis*, *A. karroo* and *Boscia albitrunca*. The vegetation type has a well-developed shrub layer with occasional dense stands of *Tarchonanthus camphoratus* and *A. mellifera*. The area usually has numerous denuded areas with an open grass layer.

The vegetation type is classified as Least Threatened although only 2% of it has been included in formally protected areas such as the Vaalbos National Park, Sandveld Nature Reserve, Bloemhof Dam Nature Reserve and S.A. Lombard Nature Reserve. 18% of the natural occurring vegetation has been transformed and a conservation target of 16% was set for the vegetation type (Mucina and Rutherford 2006).

#### Highveld Alluvial Vegetation (AZa5):

The Highveld Alluvial Vegetation (AZa5) vegetation type within the study area is mainly found along the banks of the Vaal River, and is known for its flat topography that supports riparian thickets mostly dominated by *Acacia karroo*, accompanied by seasonally flooded grasslands and disturbed herblands often dominated by alien plants.

Important species within this vegetation type include, but is not limited to, *Acacia karroo*, *Salix mucronata* subsp. *mucronata*, *S. mucronata* subsp. *woodii*, *Ziziphus mucronata*, *Celtis africana*, *Rhus lancea*. Herbs: *Persicaria lapathifolia*, *Alternanthera sessilis*, *Barleria macrostegia*, *Corchorus asplenifolius*, *Equisetum ramosissimum*. Graminoids: *Agrostis lachnantha*, *Andropogon eucomus*, *Chloris virgata*, *Cynodon dactylon*, *Eragrostis plana*.

The vegetation type is classified as Least Threatened with nearly 10% of it formally protected in various Nature Reserves. This vegetation type is prone to invasion by a number of weeds, encouraged by the high nutrient status of soils and ample water supply.

### BIODIVERSITY CONSERVATION AREAS

The Free State Biodiversity Plan shows that Ecological Support Areas (ESA) were identified within the study area. The Lexicon of Biodiversity Planning in South Africa defines an ESA as “an area that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a CBA (critical biodiversity area) or protected area, or to generate or deliver ecosystem services, or to meet remaining biodiversity targets for ecosystem types or species when it is not possible or no necessary to meet them in natural or near-natural areas”.

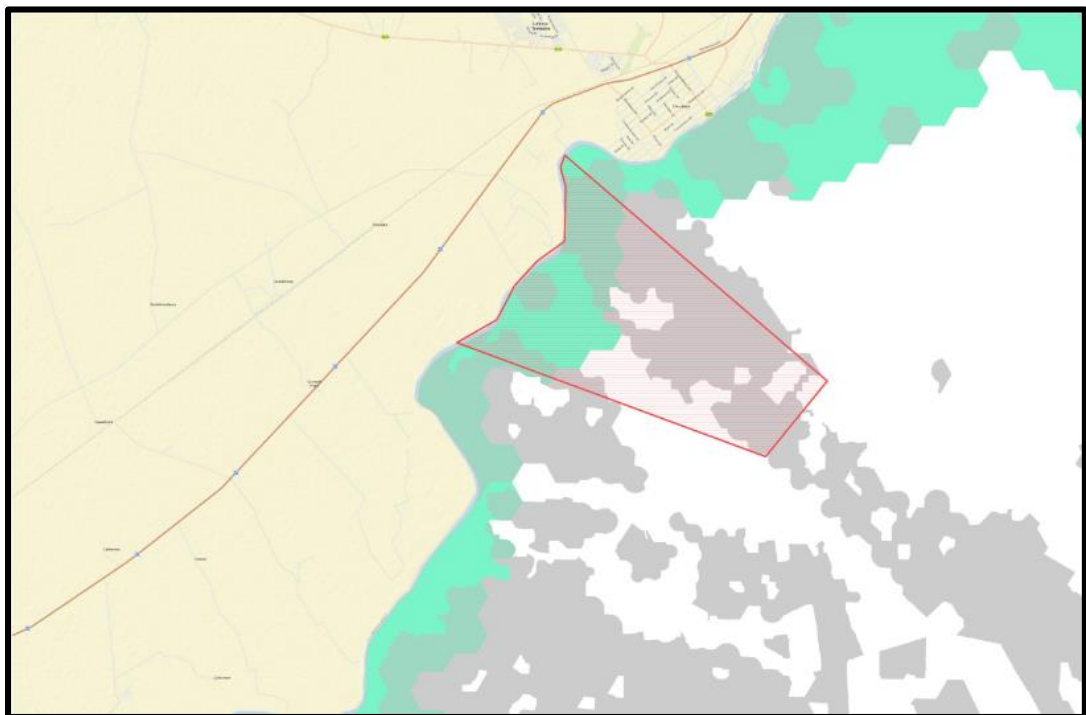


Figure 11: Free State Biodiversity Plan showing the proposed mining area that extends over an ESA (green) area. Grey represents degraded areas, and white – other. (Image obtained from the SANBI BGIS Land Use Decision Support (LUDS) Tool)



## MINING AND BIODIVERSITY

*(Information extracted from the Mining and Biodiversity Guideline: Mainstreaming Biodiversity into the Mining Sector, Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, 2013)*

The Mining and Biodiversity Guideline, compiled by the South African Mining and Biodiversity Forum (SAMBF) provides the mining sector with a practical, user-friendly manual for integrating biodiversity considerations into planning processes and managing biodiversity during the developmental and operational phases of a mine, from exploration through to closure.

When the proposed mining footprint is layered over the Mining and Biodiversity Map, as shown in the figure below, the study area falls outside any identified biodiversity sensitive area and therefore does not require any additional action.



*Figure 12: The Mining and Biodiversity importance map with the proposed mining footprint indicated by the red polygon. Black – Legally protected, mining prohibited; Brown – High biodiversity importance, high risk to mining; Dull Yellow – Moderate biodiversity importance.*

## FAUNA

Fauna that may be present on, or visit the study area, includes reptiles such as tortoises, harlequin snakes, sand snakes, skaapstekers, house and mole snakes, puff adders and

even cape cobras. The area is also home to numerous bird species nesting in the riparian vegetation along the Vaal River, as well as the shrub and tree cover inland from the river valley.

Various game farms were established within the area, where amongst other species springbok, kudu, oryx, zebra, waterbuck, ostrich and black wildebeest roam. Duiker and steenbok also frequent the area. Predators such as the African wild cat, aardwolf, black-backed jackal, caracal, and genet are also present within certain natural areas

## **HUMAN ENVIRONMENT**

### **CULTURAL AND HERITAGE ENVIRONMENT**

The study area is rich in history that extends from the Stone Age to the very recent (1997) diamond rush upon rediscovery of diamonds along the banks of the Vaal River on the Free State side. Stone Age activity is supported by rock art and the presence of stone implements (e.g. Stowlands). The discovery of diamonds in the Vaal River in the 1870's catechized the eventual founding of the town of Christiana on the Northern Cape Province side of the Vaal River (nearest town to the application area). The area is also rich in Anglo-Boer War history, such as Christiana town being the first ZAR (Zuid-Afrikaanse Republic) town to be captured by General Hunter on 16 May 1900.

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening palaeontologically sensitive areas at the onset of a project. When the footprint of the proposed mining area is placed on the PSM, it shows the study area to extend over areas of high (orange), moderate (green), and low (blue) concern as presented in the figure below. In light of this, a palaeontological desktop study will be conducted that will comment on the need for a field based assessment.



Figure 13: The SAHRA palaeontological sensitivity map shows that the proposed mining footprint (red polygon) extends over areas of High (banks of the Vaal River), Moderate, and Low concern.

**SOCIO-ECONOMIC ENVIRONMENT**

*(Information extracted from the Social and Labour Plan for the Invest in Property 84 (Pty) Ltd Mining Operation, Lejweleputswa Magisterial District, 2019)*

The proposed mining area is located on the south-eastern bank of the Vaal River within the Free State Province and forms part of Ward 4 of the Tokologo Local Municipality. The Tokologo local municipality is a category B municipality located within the Lejweleputswa district in the Western Free State Province. Boshof is the capital town and is situated in the centre, whilst Dealesville is further east of Boshof, and Hertzogville is situated in the north of the municipal area. Dealesville is the smallest town within Tokologo Local Municipality.

Population Dynamics

According to STATS (2011), the Tokologo Local Municipality consists of a total of 28 926 people, of which 84.5% is African black, 9.9% is white, with the other population groups making up the remaining 5.6%.

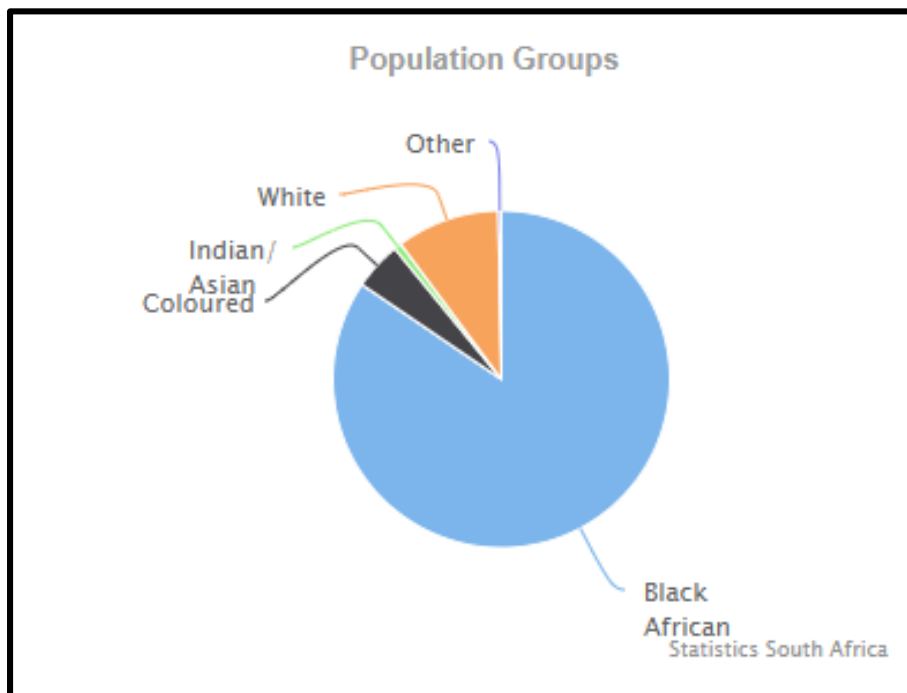


Figure 14: Indication of the population groups of the Tokologo municipal area.

Tokologo population had more males than females from the age of 35-64 with percentage contribution of 1.2%. Even though the male population has been more than the female population since 1996, there was a slight decrease of 0.7% between 2001 and 2011. In terms of gender, the table below shows a slight increase of 1.5% of males compared to 1996, 2001 and 2011 where female was dominating in Tokologo local municipality.

Table 13: Sex ratio (male per 100 female – 102).

| Age group       | Gender       |              | Total        |
|-----------------|--------------|--------------|--------------|
|                 | Male         | Female       |              |
| 0-14 (Children) | 4262         | 4042         | 8303         |
| 15-34 (Youth)   | 5024         | 5055         | 10079        |
| 35-64 (Adults)  | 4328         | 3997         | 8325         |
| 65+ (Elderly)   | 1120         | 1322         | 2442         |
| <b>Total</b>    | <b>14733</b> | <b>14416</b> | <b>29149</b> |

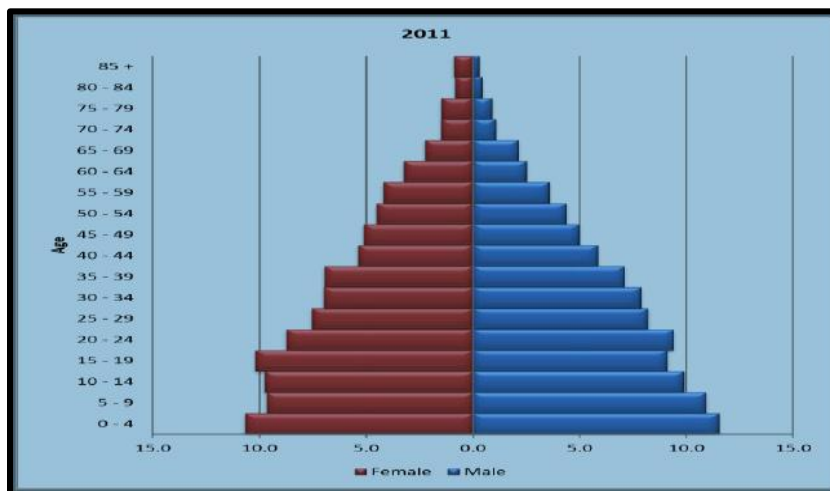


Figure 15: Gender profile of the Tokologo municipal area.

### Economic Profile

The primary activities in Boshof are restricted to agriculture which includes livestock farming, game farming and crop farming. The commercial sector mainly consists of service provision to the agricultural community in the rural hinterland. The trade and service sector in Hertzogville is focused on providing for the basic needs of the local urban and surrounding farming community only. The industrial sector in Hertzogville consists of the co-operative where agricultural products are processed, the abattoir and a few light industrial activities relating to vehicle maintenance and the agricultural sector. Dealesville is a service centre to its local residents, providing only the most essential services. Livestock farming and crop farming activities are most common in the area, although salt works on a small scale also exist at some of the numerous salt pans characterizing the area.

The sectorial composition to the different sectors for the GDP contribution is as follows:

- ◆ Agriculture 24.6%
- ◆ Mining 21.6%
- ◆ Manufacture 2.9%
- ◆ Electricity 2.9%
- ◆ Construction 2.5%
- ◆ Trade 12.3%
- ◆ Transport 5.0%
- ◆ Finance 7.6%
- ◆ Community services 20.7%

Education Levels

The figure below shows percentage distribution of Tokologo population aged 5-24 years who were attending school during the population census 2011. In 2011, 66.5% were found to be attending school whereas 33.5% were not. Males were found to be attending school more than females with 67.7% and 65.3% respectively.

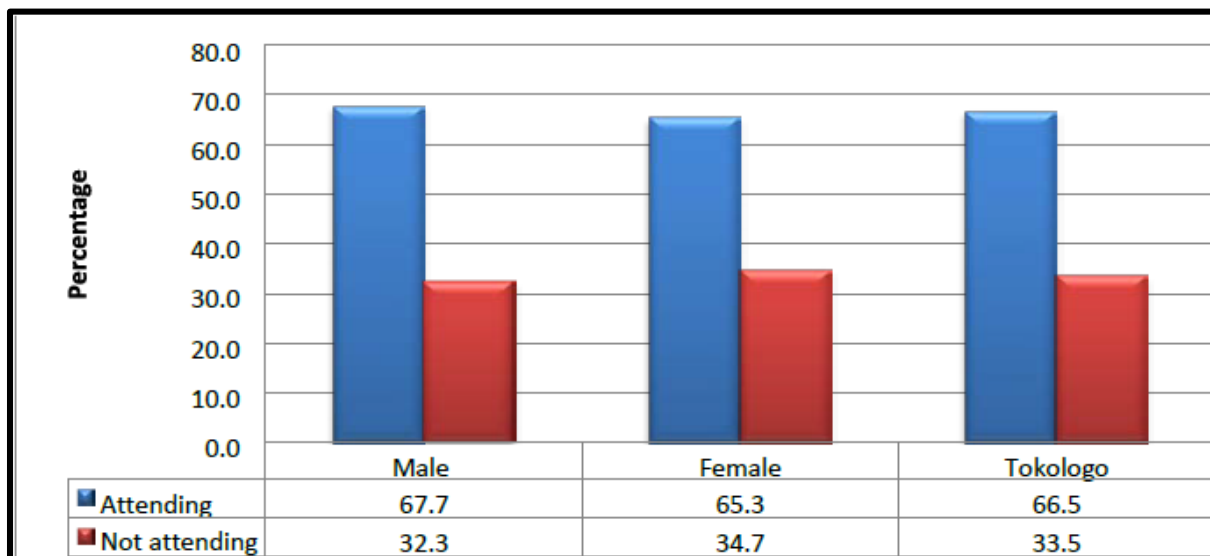


Figure 16: School attendance based on gender distribution.

The figure below shows the education levels of population aged 5 years and above in Tokologo at 12.6% in 2011. As for higher education levels, there was a decrease in number of people who attained higher education level certificates from 1996 to 2001 from 2.2% to 1.8%, however, there was an increase from 1.8% to 3.4% in 2001 and 2011 respective.

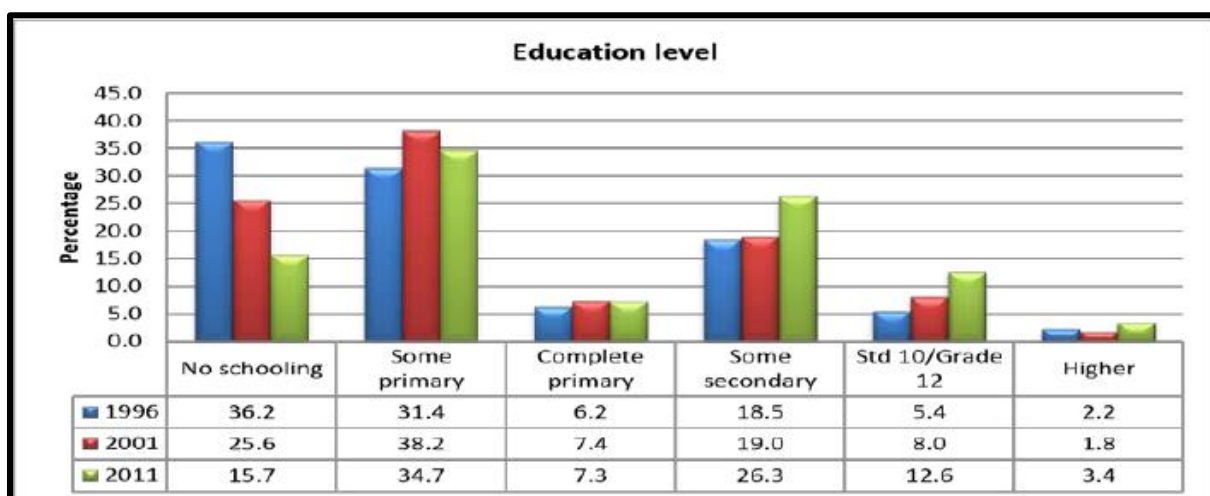


Figure 17: Education levels of the Tokologo population.

The figure below show an increase of people who has obtained Grade 12 as compared to 2011. There was also a slight increase in people who obtained higher/national diploma with grade 12/occupational certificate/ NQF 6. One of the concerns in the municipality is an increase of people who doesn't attend school and end-up increasing the number of unemployed people in the municipality.

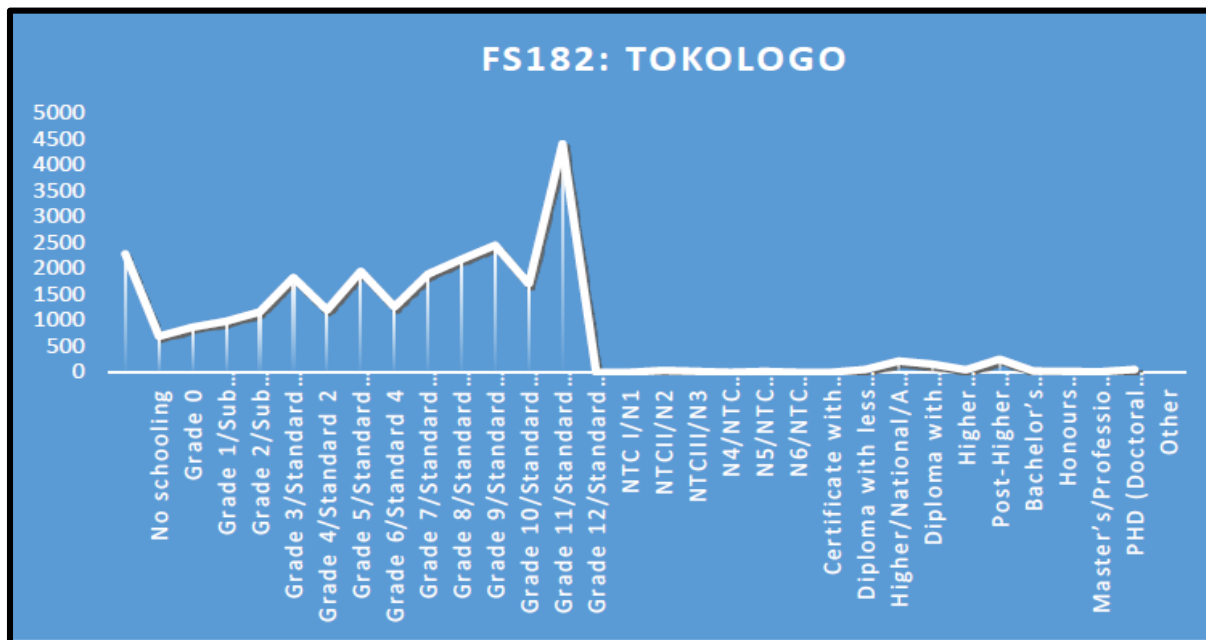


Figure 18: Number of people compared to various education levels.

Employment Profile

The indicators show that the overall unemployment rate for Tokologo increased steadily from 22.8% in 1996 to 27.4% in 2011 whereas in 2001 it was 16.9%. Female unemployment rate over the years 1996, 2001 and 2011, is greater than that of males. It is clear that the labour participation rate was the highest in 2001 with 59.5% followed by 1996 with 58.6% then 2011 with 50.0%. Same pattern is shown for both male and female youth participation rate. Labour absorption rate was found to the highest in 1996 with 45.2% and decreased to 36.3% in 2011 whereas for both male and female it was also highest in 1996 with 61.3% and 29.6% respectively.

Income Profile

The people that are employed earn an average wage. 1.2% of the household income is between R1.00 and R4 800.00 per month. 5.1% of the household income is between R4 801.00 and R9 600.00 per month. 43.9% of the household income is between R9 601.00 and R19 600.00 per month. 25.6% of the household income is between R19 601.00 and R38 200.00 per month. 8.4% of the household income is between R38 201.00 and R76

400.00 per month. 4.7% of the household income is between R76 401.00 and R153 800.00 per month. 4.7% of the household income is between R153 801.00 and R307 600.00, 3.2% of the household income is between R307 601.00 and R614 400.00, 1.1% of the household income is between R614 001.00 and R1 228 800.00, 0.3% of the household income is between R1 228 801.00 and R2 457 600.00 and lastly 0.1% of the household income is R2 457 601.00 +. Please refer to the figure below.

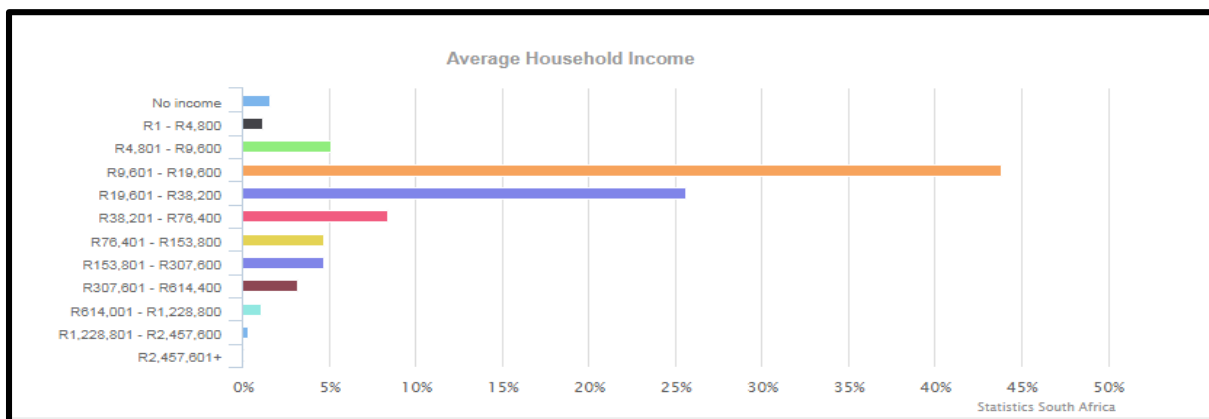


Figure 19: Average household income.

Unemployment

9 122 people are economically active (employed or unemployed but looking for work), and of these 27.4% are unemployed. Of the 4 647 economically active youth (15 – 34 years) in the area, 35.8% are unemployed. Tokologo Local municipality is the lowest recorded unemployment rate in the district, it has increased from 20.3% in 2005 to 26.8% percent in 2014, with the average of 23% unemployment rate.

The below figure shows labour absorption rates in Tokologo local municipality over census years 1996, 2001 and 2011. Labour absorption rate was found to the highest in 1996 with 45.2% and decreased to 36.3% in 2011 whereas for both male and female it was also highest in 1996 with 61.3% and 29.6% respectively.



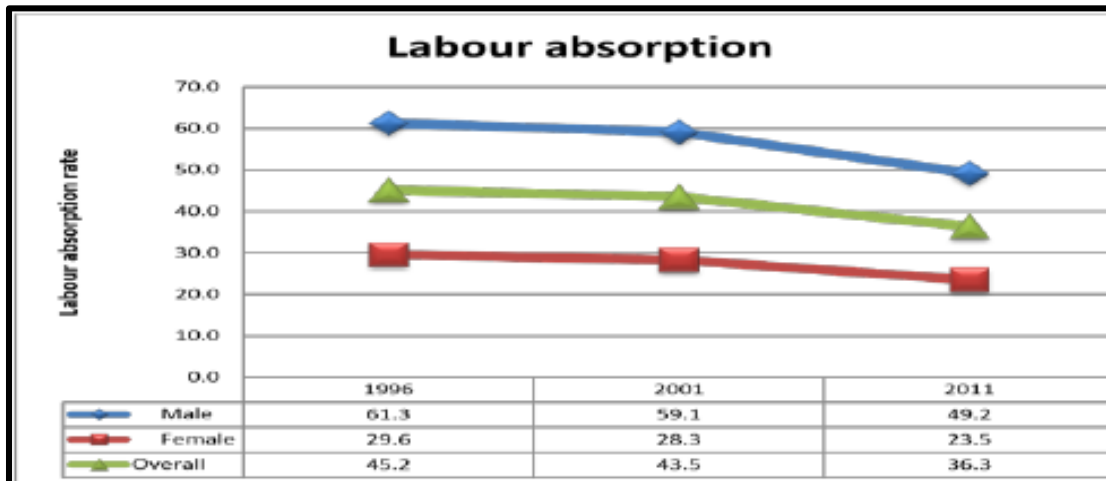


Figure 20: Labour absorption figures.

The figure below shows youth (15-35 years) unemployment rate of Tokologo local municipality by gender. Over the years 1996, 2001 and 2011, the unemployment rate was found to be 27.1%, 32.4% and 35.2% respectively and again the female unemployment rate lead over males and Tokologo municipality since 1996 to 2011.

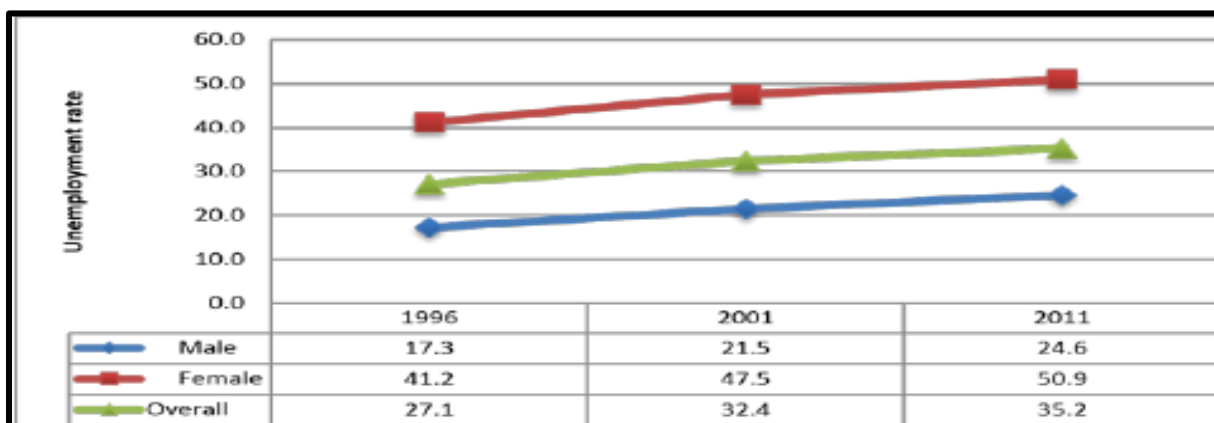


Figure 21: Youth unemployment rate of Tokologo local municipality.

**(b) Description of the current land uses**

The area earmarked for the proposed mining activity extends over eight (8) properties as listed earlier, within the magisterial district of Lejweleputswa, situated on the south-eastern bank of the Vaal River. The primary land use of the earmarked properties is agriculture including livestock- and/or game farming, crop production (centre-pivot irrigation), orchards, and dryland farming. The land use of some of the properties was also extended to include diamond mining.

As mentioned earlier, the Applicant entered into a surface use agreement with the property owners when the prospecting right (FS30/5/1/1/2/449PR) was issued that bar mining in the cultivated areas (pivots and/or orchards) of the earmarked

properties. As shown in the figure below, large portions of the earmarked properties were already developed for agricultural use. When these areas (developed agricultural areas) are excluded from the allowable mining footprint (in accordance with the surface use agreement) approximately ±34% of the mining right footprint remains to be prospected and/or mined by the Applicant should a mining right be issued.

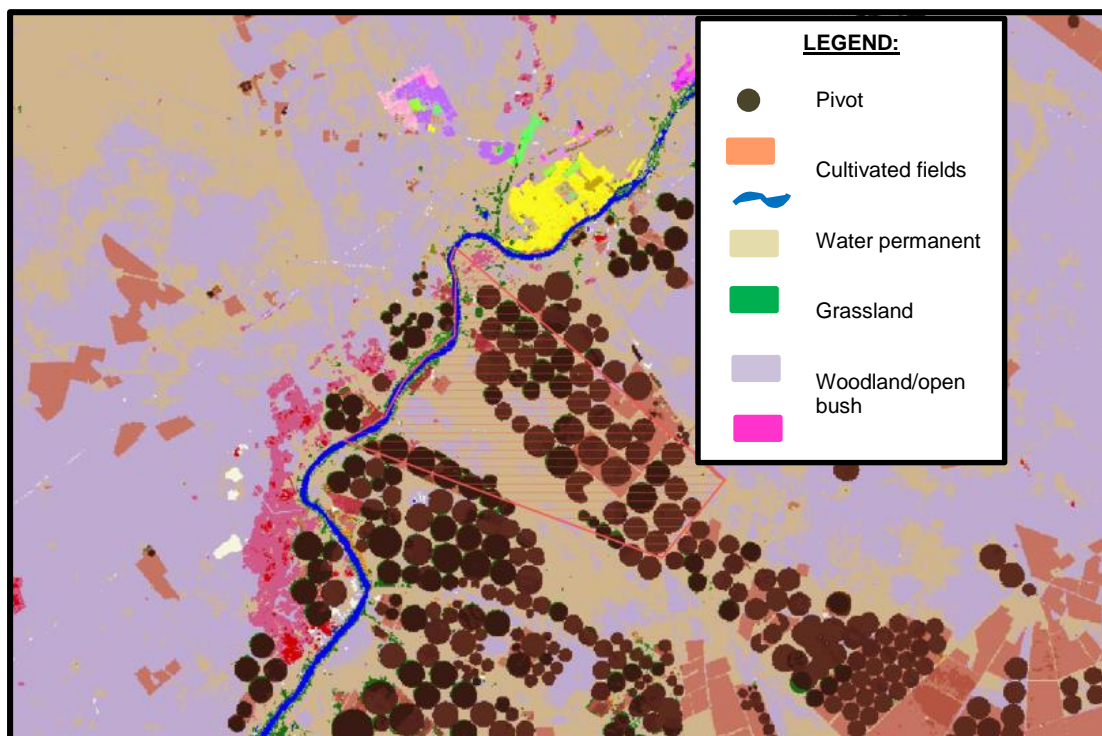


Figure 22: Land use of the study area where the mining footprint is shown by the red polygon.

Table 14: Land uses and/or prominent features that occur within 500 m radius of the study area.

| LAND USE CHARACTER                  | YES | NO | DESCRIPTION |
|-------------------------------------|-----|----|-------------|
| Natural area                        | YES | -  |             |
| Low density residential             | -   | NO |             |
| Medium density residential          | -   | NO | -           |
| High density residential            | -   | NO | -           |
| Informal residential                | -   | NO | -           |
| Retail commercial & warehousing     | -   | NO | -           |
| Light industrial                    | -   | NO | -           |
| Medium industrial                   | -   | NO | -           |
| Heavy industrial                    | -   | NO | -           |
| Power station                       | -   | NO | -           |
| High voltage power line             | -   | NO |             |
| Office/consulting room              | -   | NO | -           |
| Military or police base / station / | -   | NO | -           |

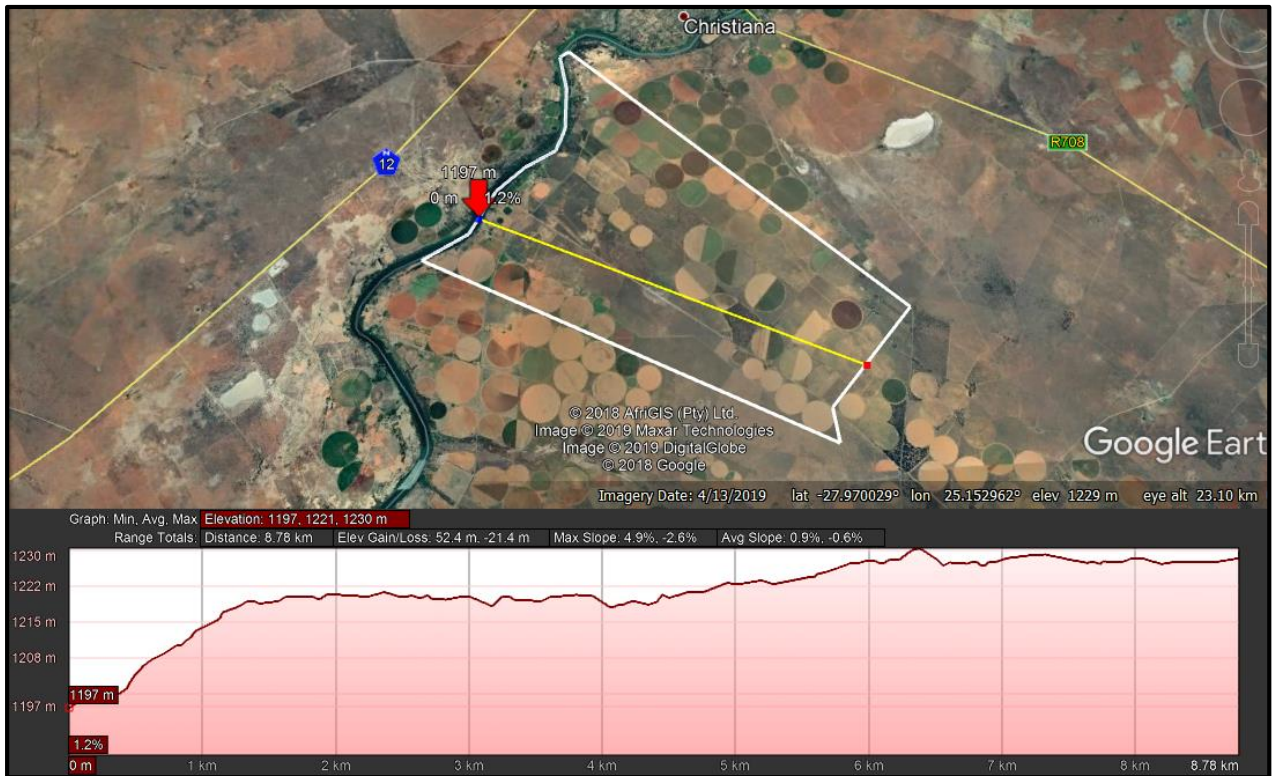
| LAND USE CHARACTER               | YES | NO | DESCRIPTION  |
|----------------------------------|-----|----|--|
| compound                         |     |    |  |
| Spoil heap or slimes dam         | -   | NO | -  |
| Quarry, sand or borrow pit       | -   | NO | -  |
| Dam or reservoir                 | -   | NO | -  |
| Hospital/medical centre          | -   | NO | -  |
| School/ crèche                   | -   | NO | -  |
| Tertiary education facility      | -   | NO | -  |
| Church                           | -   | NO | -  |
| Old age home                     | -   | NO | -  |
| Sewage treatment plant           | -   | NO | -  |
| Train station or shunting yard   | -   | NO | -  |
| Railway line                     | -   | NO | -  |
| Major road (4 lanes or more)     | -   | NO | -  |
| Airport                          | -   | NO | -  |
| Harbour                          | -   | NO | -  |
| Sport facilities                 | -   | NO | -  |
| Golf course                      | -   | NO | -  |
| Polo fields                      | -   | NO | -  |
| Filling station                  | -   | NO | -  |
| Landfill or waste treatment site | -   | NO | -  |
| Plantation                       | -   | NO | -  |
| Agriculture                      | YES | -  | The primary land use of the earmarked properties is agriculture including livestock-and/or game farming, crop production (centre-pivot irrigation), orchards, and dryland farming. |
| River, stream or wetland         | -   | NO |  |
| Nature conservation area         | -   | NO |  |
| Mountain, hill or ridge          | -   | NO |  |
| Museum                           | -   | NO | -  |
| Historical building              | -   | NO | -  |
| Protected Area                   | -   | NO | -  |
| Graveyard                        | -   | NO | -  |
| Archaeological site              | -   | NO | -  |
| Other land uses (describe)       | -   | NO | -  |

**(c) Description of specific environmental features and infrastructure on the site.**

**SPECIFIC ENVIRONMENTAL FEATURES**

**SITE SPECIFIC TOPOGRAPHY**

The proposed mining area is situated along the south-eastern bank of the Vaal River within the Free State Province at an altitude that range between 1 197 – 1 228 mamsl. As mentioned earlier the topography of the study area is flat, with the elevation rising gradually in a south-easterly direction away from the riverbed. The figure below shows the elevation profile of the footprint area from the highest point in the south-east (1 228 mamsl) to the lower reaches of the Vaal River (1 197 mamsl).



*Figure 23: Elevation profile of the proposed mining area from the highest point in the south (1 228 mamsl) to the lower reaches of the Vaal River (1 197 mamsl).*

### **SITE SPECIFIC GEOLOGY AND SOILS**

The site specific geology and soils of the proposed mining area resembles that of the wider study area as discussed earlier.

The feasibility study done by Anmic diamonds, in 2016, on a portion of the farm Smithskraal 1519 determined that the thickness of the gravels ranges from 200 mm to 450/500 mm (averaging out at  $\pm 300$  mm). The gravels consist of various varieties of quartz, jasper, agate and silicified wood etc. all good indicators. The geologist dated the gravel bed at roughly 1 million years, with the silicified wood in the gravels dating back 280 million years.

ARS Geology Consulting and Mineralogical Services confirmed the presence of accessory gold particles in the diamondiferous gravels between Christiana and Warrenton in 2018.

### **SITE SPECIFIC HYDROLOGY**

The hydrology of the proposed mining footprint is representative of the regional hydrology described for the study area earlier in this report. The Vaal River forms the north-western boundary of the proposed mining area. Further to this, the earmarked footprint harbors some drainage lines with associated floodplains and potential wetlands of importance.

According to the SANBI National Wetlands and FEPA information a few wetlands do occur within the study area as shown in the figure below. The wetlands mainly fall within one of the following categories:

- Floodplain Wetland: The mostly flat or gently sloping wetland area adjacent to and formed by a lowland or upland floodplain river, and subject to periodic inundation by overtopping of the channel bank (SANBI, 2009).
- Valley-Floor Wetland: Longitudinal wetland that runs along a valley floor. This type of wetland is associated with valley side-slopes within  $\pm 500$  m of the aquatic ecosystem. (SANBI, 2013).
- Plains Wetland: Plains are differentiated from valley floors by the absence of surrounding side-slopes. Only very flat areas with a gradient of less than 1:100 are considered to be plains. (SANBI, 2013).
- Bench Wetland: A relatively discrete area of mostly level or nearly level high round, including hilltop, saddles and shelves. Benches are significantly less extensive than plains. (SANBI, 2013).

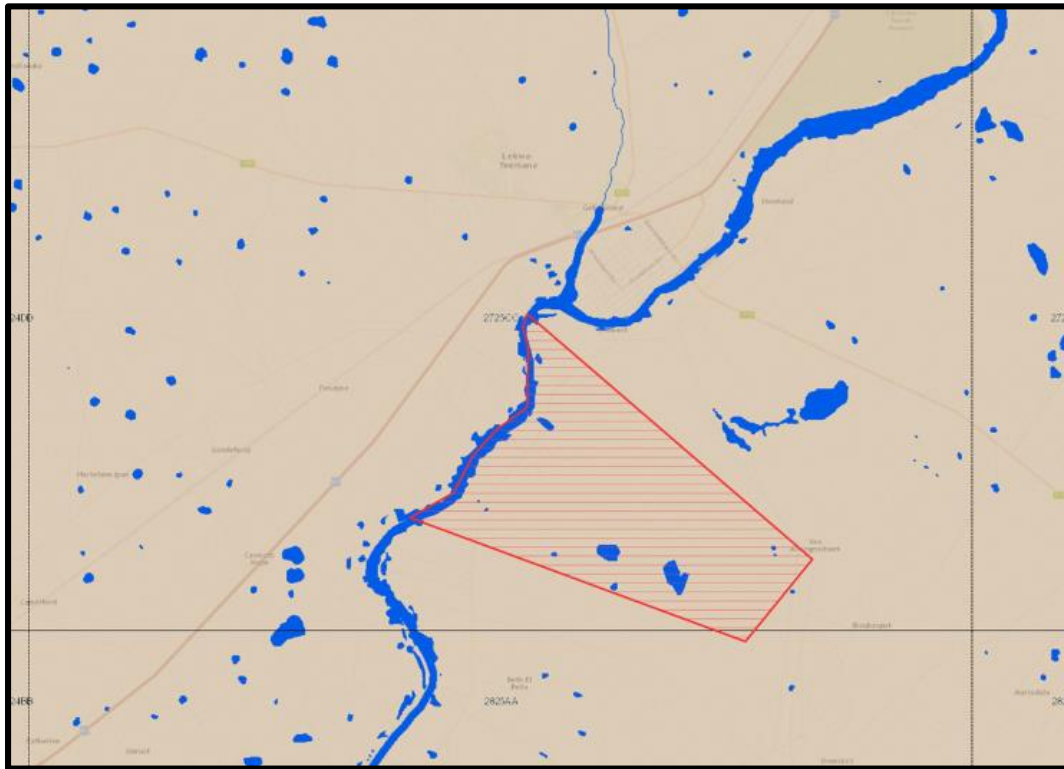


Figure 24: Map showing the location of wetland pockets (blue) within the proposed mining area (red polygon) (Image obtained from BGIS Land Use Decision Support (LUDS) Tool).

According to the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H), mining in close proximity to the Vaal River or within the floodplain and riparian zone will still result in significant impacts. This is also applicable to the lateral drainage lines and small depressions or pans occurring in the study area. Mining operations in close proximity to any of these systems are anticipated to have a moderate risk and will likely still have significant impacts though unlikely to be permanent and will mostly influence sediment load and runoff values. Furthermore, through adequate mitigation these impacts can be minimised and provided adequate rehabilitation is undertaken no additional and other permanent modification to the functioning of these systems.

The following should be avoided at all times:

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.
- All of the lateral drainage lines which flow into the Vaal River.
- The pan systems occurring on the site, including small and degraded pans.

The watercourses and wetlands should constantly be monitored for erosion, especially where mining has occurred in close proximity. Where erosion is evident this must be remedied.

Therefore, the mining right requires a Water Use Licence in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998) for water uses as defined in section 21 of the act since the proposed mining area is within 500 m of wetlands.

### **SITE SPECIFIC AIR QUALITY AND NOISE AMBIANCE**

The air and noise ambiance of the study area was historically representative of an agricultural environment in which farming equipment operates with occasional dust emissions from denuded areas. The agricultural use of the study area intensified over years, and current land uses include crop production supported by centre-pivot irrigation, orchards, dryland farming, game and livestock farming, diamond mining, and tourism, all of which contribute to the atmospheric quality and noise ambiance of the study area. A surfaced public road, turning from the R708, cross the proposed mining area, and will be used as main access road. This road follows the Vaal River in a south-western direction.

### **SITE SPECIFIC GROUNDCOVER**

The vegetation cover of the proposed mining footprint is representative of the regional groundcover described for the study area earlier in this report. Undisturbed/natural areas have vegetation representative of the Kimberley Thornveld, and the Highveld Alluvial Vegetation type.

According to the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) it is evident that the majority of the site has been transformed by agricultural and mining operations. This would therefore increase the conservation value of those portions of remaining natural vegetation, i.e. the less habitat remains, the rarer it will be, the higher the conservation value will become. However, when looking at available resources it is evident that the vegetation types on the site, Kimberley Thornveld and Highveld Alluvial Vegetation is not currently regarded as rare or endangered and still covers large areas of the region.

The Free State Province Biodiversity Management Plan (2015) regards the site as being of Ecological Support Area (ESA) 1 and 2 as well as Degraded and Other categories and do not contain Critical Biodiversity Area (CBA) which would be of high conservation value (Appendix A: Map 2 of Appendix H). Despite this, natural areas do still contain some elements of conservation value such as a range of protected succulent and geophytic species and large and old specimens of the protected *Vachellia erioloba* (Camel Thorn).

Given the fairly low conservation value of remaining natural areas on the site, this will decrease the impact that mining operations will have on the loss of habitat and species diversity. However, from previous mining operations it is also clear that mining operations cause significant impacts and result in the transformation of natural areas. By the nature of alluvial diamond mining, i.e. removal of the vegetation and modification of the soils profile, it results in the irreversible transformation of the ecosystem. However, given the fairly uniform soil conditions and habitats on the site and provided that comprehensive rehabilitation is undertaken, it may be possible to re-instate a somewhat similar vegetation composition after mining has ceased. This will also entail the re-instatement of the natural topography as far as possible as well as the correct management of topsoil. Mining also results in high levels of disturbance and consequently, the establishment of exotic weeds and invasive species and the eradication and monitoring of these should also form an important part of the management of mining and rehabilitation operations.

Since it is clear that the impact of mining operations on natural areas will be high and will lead to irreversible transformation, mining should be confined to selected and limited areas and should not be implemented indiscriminately over the entire area. Furthermore, numerous protected plant species has been identified in remaining natural areas. These include the protected succulent and geophytic species, *Boophone distichia*, *Orbea lutea subsp. lutea*, *Aloe grandidentata*, *Raphionacme hirsuta* and *Ammocharis coranica*. It is recommended that walkthrough survey be conducted prior to mining and where mining will affect these species, the necessary permits should be obtained and a significant proportion of these transplanted to adjacent areas where they will remain unaffected. In addition, there is a high abundance of the protected *Vachellia erioloba* (Camel Thorn) in most of the remaining natural areas and these should be retained and excluded from mining as far as possible. Where any of these will require removal, the necessary permits should be obtained and replaced during the rehabilitation phase by means of saplings.





*Figure 25: Aerial view of the recent condition of the study area (Google Earth 2021) which clearly indicates the large scale transformation of the area. The approximate extent of natural areas is indicated: Yellow – southern plains, Blue – western rocky areas, information obtained from Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H)*

## **SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT**

According to the Heritage Desktop Assessment conducted by Jaco van der Walt (HCAC) (Refer to Appendix I1) The scope of work comprises a heritage desktop report for a large area comprising approximately 3 955.70 ha. Due to the geographical size of the current prospecting right and the fact that the relatively small impact areas of the proposed mining right have not been confirmed as yet, it was deemed not feasible to conduct fieldwork at this point. Some heritage surveys (Rossouw 2006; Dreyer 2008; Tomose 2016; Van Vollenhoven 2018) were conducted in the greater area and this desktop study is informed by available data for the area. Based on these studies, resources such as archaeological resources, historical finds, cultural landscapes, burials and cemeteries can be expected in the study area. According to the Palaeontological Impact Assessment (Appendix I2) based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the loose sands of the Quaternary.

However, should artefacts archaeological items be observed during the mining activities, then all activity should cease immediately, the area marked off activity and a specialists consulted prior to any further activity. This also includes if any graves are observed on

site during activity progress then all activity should have ceased and the area demarcated as a no-go zone.

### **SITE SPECIFIC SOCIO-ECONOMIC ENVIRONMENT**

A Social and Labour Plan (SLP) was submitted as part of the MR application of the Applicant. The SLP forms the basis for the implementation of programmes and projects as key activity drivers of the development and operation of the proposed mining activity in the Boshof area. It offers the building blocks for future economic development and growth of the local area. The scope of the document offers the Applicant a platform to engage in the development of the local economy and community through a basis of human resource development, economic delivery, business development and community participation. The nature of the document is therefore aimed at the widest possible comprehension and stimulation for inputs.

The SLP notes that the Applicant proposes to have approximately 90 employees (30 employees per site) who will support approximately 288 dependents. Due to the fact that most of the employees will reside within Christiana, it is fair to presume that the majority of monthly earned salaries will be spent in the local area. Indirectly, through the payment for services and suppliers the mine also supports employment of the procurement partners.

### **SITE SPECIFIC EXISTING INFRASTRUCTURE**

The infrastructure within the mining footprint include, but isn't limited to, the following:

- Fencing;
- Housing and supporting structures;
- Pivots;
- Power lines.
- Roads (public as well as private); and
- Water abstraction and storage infrastructure.

The proposed mining method is such that it can be moved away from build structures and existing infrastructure, thereby rendering the impact in this regard insignificant.

As mentioned earlier, approximately ±34% of the mining right footprint remains to be prospected and/or mined by the Applicant when the already developed areas are excluded from the application footprint.

Should the Applicant implement the mitigation measures proposed in the EMPr the existing infrastructure in the footprint area should be protected against mining related impacts of the proposed activity.

**(d) Environmental and current land use map.**

(Show all environmental, and current land use features)

The environmental and current land use maps are attached as Appendix D.

**v) Impacts and risks identified including the nature, significance consequence, extent, duration and probability of the impacts, including the degree to which these impacts**

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

The following potential impacts were identified for the main activities associated with each phase of the proposed project.. The significance rating was determined using the methodology as explained under *j) Methodology used in determining and ranking the significance of environmental impacts*. The impact rating listed below was determined for each impact **prior** to bringing the proposed mitigation measures into consideration. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

**INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR  
SITE ESTABLISHMENT:**



Increased traffic on public and private access roads

|                       |          |        |  |             |           | Significance                      |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|-----------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                        | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                   | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |

Visual intrusion as a result of site establishment

|                       |          |        |  |             |           | Significance                      |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|-----------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                        | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                   | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 4           | 5         | 4.5                               | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 4           | 5         | 4.5                               | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 4           | 5         | 4.5                               | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 4           | 5         | 4.5                               | 13.5    |            |           |             |         |

Loss of areas of agricultural importance

|                            |          |        |  |             |           | Significance                      |         |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|-----------------------------------|---------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                        | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |                                   | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2                                 | 8.6     |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2                                 | 8.6     |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2                                 | 8.6     |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2                                 | 8.6     |            |           |             |         |

Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area

|                              |          |        |  |             |           | Significance                         |             |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|--------------------------------------|-------------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                           | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: High</b>          |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                            | 5        | 5      | 5                                      | 5           | 5         | 5                                    | <b>25</b>   |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 4                            | 5        | 5      | 4.6                                    | 3           | 5         | 4                                    | <b>18.4</b> |            |           |             |         |
| <b>Rating: Medium</b>        |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                            | 5        | 5      | 5                                      | 3           | 1         | 2                                    | <b>10</b>   |            |           |             |         |
| <b>Rating: Medium</b>        |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                            | 5        | 5      | 5                                      | 3           | 1         | 2                                    | <b>10</b>   |            |           |             |         |

Potential impact on vegetation and listed and protected plant species

|                              |          |        |  |             |           | Significance                         |             |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|--------------------------------------|-------------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                           | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: High</b>          |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                            | 5        | 5      | 5                                      | 5           | 5         | 5                                    | <b>25</b>   |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 4                            | 5        | 5      | 4.6                                    | 3           | 5         | 4                                    | <b>18.4</b> |            |           |             |         |
| <b>Rating: Medium</b>        |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                            | 5        | 5      | 5                                      | 3           | 1         | 2                                    | <b>10</b>   |            |           |             |         |
| <b>Rating: Medium</b>        |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                            | 5        | 5      | 5                                      | 3           | 1         | 2                                    | <b>10</b>   |            |           |             |         |

Potential impact on fauna within footprint area

|                    |          |        |  |             |           | Significance                      |            |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|-----------------------------------|------------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                        | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |                                   | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 2                  | 5        | 2      | 3                                      | 2           | 1         | 1.5                               | <b>4.5</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 2                  | 5        | 2      | 3                                      | 2           | 1         | 1.5                               | <b>4.5</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 2                  | 5        | 2      | 3                                      | 2           | 1         | 1.5                               | <b>4.5</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 2                  | 5        | 2      | 3                                      | 2           | 1         | 1.5                               | <b>4.5</b> |            |           |             |         |

Potential impact on areas/infrastructure of heritage or cultural concern

|                            |          |        |  |             |           | Significance                      |            |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|-----------------------------------|------------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                        | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |                                   | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 5                          | 5        | 5      | 5                                      | 2           | 1         | 1.5                               | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 5                          | 5        | 5      | 5                                      | 2           | 1         | 1.5                               | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 5                          | 5        | 5      | 5                                      | 2           | 1         | 1.5                               | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: None</b> |            |            |           |             |         |
| 5                          | 5        | 5      | 5                                      | 2           | 1         | 1.5                               | <b>7.5</b> |            |           |             |         |

Potential impact on existing infrastructure within the footprint area.

|                            |          |        |  |             |           | Significance                                 |            |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|--|------------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                                   | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2  | <b>8.6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2  | <b>8.6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2  | <b>8.6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 4      | 4.3                                    | 3           | 1         | 2  | <b>8.6</b> |            |           |             |         |

Increased and continued work opportunities to local residents (**Positive Impact**)

|                              |          |        |  |             |           | Significance                     |           |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|-----------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low       | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9   | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |

**INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR**  
**Diversified income to landowners (Positive Impact)**



|                              |          |        |  |             |           | Significance                     |           |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|-----------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low       | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9   | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |

**STRIPPING AND STOCKPILING OF TOPSOIL OF THE MINING AREA:**

Dust nuisance caused by the disturbance of soil

|                            |          |        |  |             |           | Significance                                 |            |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|--|------------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                                   | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 3                          | 2        | 2      | 2.3                                    | 4           | 2         | 3  | <b>6.9</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 3                          | 2        | 2      | 2.3                                    | 4           | 2         | 3  | <b>6.9</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 3                          | 2        | 2      | 2.3                                    | 4           | 2         | 3  | <b>6.9</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 3                          | 2        | 2      | 2.3                                    | 4           | 2         | 3  | <b>6.9</b> |            |           |             |         |

Noise nuisance caused by earthmoving machinery

|                             |          |        |  |             |           | Significance                         |          |            |           |             |         |
|-----------------------------|----------|--------|--|-------------|-----------|--------------------------------------|----------|------------|-----------|-------------|---------|
|                             |          |        | Consequence                            |             |           | Likelihood                           | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                    | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 4           | 2         | 3                                    | <b>6</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 4           | 2         | 3                                    | <b>6</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 4           | 2         | 3                                    | <b>6</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 4           | 2         | 3                                    | <b>6</b> |            |           |             |         |

Potential infestation of the topsoil heaps with weeds or invader plant species

|                       |          |        |  |           |            | Significance                       |            |           |             |         |
|-----------------------|----------|--------|--|-----------|------------|------------------------------------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |           | Likelihood | Low                                | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent | Probability                            | Frequency | Likelihood | 1 - 4.9                            | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |           |            | <b>Degree of Mitigation: Fully</b> |            |           |             |         |
| 1                     | 5        | 3      | 3                                      | 5         | 3          | 4                                  | <b>12</b>  |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |           |            | <b>Degree of Mitigation: Fully</b> |            |           |             |         |
| 1                     | 5        | 3      | 3                                      | 5         | 3          | 4                                  | <b>12</b>  |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |           |            | <b>Degree of Mitigation: Fully</b> |            |           |             |         |
| 1                     | 5        | 3      | 3                                      | 5         | 3          | 4                                  | <b>12</b>  |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |           |            | <b>Degree of Mitigation: Fully</b> |            |           |             |         |
| 1                     | 5        | 3      | 3                                      | 5         | 3          | 4                                  | <b>12</b>  |           |             |         |

Loss/contamination of stockpiled topsoil

|                            |          |        |  |           |            | Significance                                 |            |           |             |         |
|----------------------------|----------|--------|--|-----------|------------|--|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |           | Likelihood | Low  | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent | Probability                            | Frequency | Likelihood | 1 - 4.9                                      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |           |            | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 4         | 2          | 3  | <b>9</b>   |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |           |            | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 4         | 2          | 3  | <b>9</b>   |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |           |            | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 4         | 2          | 3  | <b>9</b>   |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |           |            | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 4         | 2          | 3  | <b>9</b>   |           |             |         |

Potential contamination of construction area and surface runoff as a result of hydrocarbon spillages

|                       |          |        |  |           |            | Significance                       |             |           |             |         |
|-----------------------|----------|--------|--|-----------|------------|------------------------------------|-------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |           | Likelihood | Low                                | Low-Medium  | Medium    | Medium-High | High    |
| Severity              | Duration | Extent | Probability                            | Frequency | Likelihood | 1 - 4.9                            | 5 - 9.9     | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |           |            | <b>Degree of Mitigation: Fully</b> |             |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4         | 3          | 3.5                                | <b>11.6</b> |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |           |            | <b>Degree of Mitigation: Fully</b> |             |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4         | 3          | 3.5                                | <b>11.6</b> |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |           |            | <b>Degree of Mitigation: Fully</b> |             |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4         | 3          | 3.5                                | <b>11.6</b> |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |           |            | <b>Degree of Mitigation: Fully</b> |             |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4         | 3          | 3.5                                | <b>11.6</b> |           |             |         |



Potential erosion of denuded areas.

|                            |          |        |  |             |           | Significance                                 |            |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|--|------------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                                   | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 1      | 3.3                                    | 4           | 2         | 3  | <b>9.9</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 1      | 3.3                                    | 4           | 2         | 3  | <b>9.9</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 1      | 3.3                                    | 4           | 2         | 3  | <b>9.9</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 4                          | 5        | 1      | 3.3                                    | 4           | 2         | 3  | <b>9.9</b> |            |           |             |         |

**EXCAVATION AND LOADING:**

Safety risk posed by open excavations.

|                       |          |        |  |             |           | Significance                                 |             |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|--|-------------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                                   | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |             |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5  | <b>14.9</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |             |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5  | <b>14.9</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |             |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5  | <b>14.9</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |             |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5  | <b>14.9</b> |            |           |             |         |

Potential flooding of excavations.

|                    |          |        |  |             |           | Significance                         |          |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--------------------------------------|----------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                           | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 3                  | 1        | 1      | 1.6                                    | 3           | 2         | 2.5                                  | <b>4</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 3                  | 1        | 1      | 1.6                                    | 3           | 2         | 2.5                                  | <b>4</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 3                  | 1        | 1      | 1.6                                    | 3           | 2         | 2.5                                  | <b>4</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 3                  | 1        | 1      | 1.6                                    | 3           | 2         | 2.5                                  | <b>4</b> |            |           |             |         |

Dust nuisance due to the movement of earthmoving equipment.

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |

Noise nuisance generated by earthmoving equipment

|                       |          |        |  |             |           | Significance                         |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|--------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                           | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |

Potential contamination of surface runoff as a result of hydrocarbon spillages.

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |

Degradation of access roads.

|                              |          |        |  |             |           | Significance                                 |         |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|--|---------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                                   | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 4                            | 5        | 4      | 4.3                                    | 4           | 5         | 4.5  | 19.4    |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 4                            | 5        | 4      | 4.3                                    | 4           | 5         | 4.5  | 19.4    |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 4                            | 5        | 4      | 4.3                                    | 4           | 5         | 4.5  | 19.4    |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 4                            | 5        | 4      | 4.3                                    | 4           | 5         | 4.5  | 19.4    |            |           |             |         |

**PROCESSING OF GRAVEL:**

Increased water use within the study area.

|                     |          |        |  |             |           | Significance                         |         |            |           |             |         |
|---------------------|----------|--------|--|-------------|-----------|--------------------------------------|---------|------------|-----------|-------------|---------|
|                     |          |        | Consequence                            |             |           | Likelihood                           | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity            | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 4                   | 5        | 5      | 4.6                                    | 5           | 5         | 5                                    | 23      |            |           |             |         |
| <b>Rating: High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 4                   | 5        | 5      | 4.6                                    | 5           | 5         | 5                                    | 23      |            |           |             |         |
| <b>Rating: High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 4                   | 5        | 5      | 4.6                                    | 5           | 5         | 5                                    | 23      |            |           |             |         |
| <b>Rating: High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 4                   | 5        | 5      | 4.6                                    | 5           | 5         | 5                                    | 23      |            |           |             |         |

Dust nuisance generated at the processing area

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 2      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |

Noise nuisance stemming from the processing activities

|                       |          |        |  |             |           | Significance                         |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|--------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                           | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |         |            |           |             |         |
| 2                     | 4        | 2      | 2.6                                    | 3           | 5         | 4                                    | 10.4    |            |           |             |         |

Safety risk posed by settling ponds

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 1      | 2.6                                    | 4           | 5         | 4.5                                | 11.7    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 1      | 2.6                                    | 4           | 5         | 4.5                                | 11.7    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 1      | 2.6                                    | 4           | 5         | 4.5                                | 11.7    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                     | 4        | 1      | 2.6                                    | 4           | 5         | 4.5                                | 11.7    |            |           |             |         |

Potential contamination of environment as a result of improper waste disposal

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 3         | 3.5                                | 11.6    |            |           |             |         |

**TRANSPORT OF CONCENTRATE TO RECOVERY PLANT:**

Increased traffic along the public and private access roads.

|                       |          |        |  |             |           | Significance                         |             |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|--------------------------------------|-------------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                           | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 4           | 3         | 3.5                                  | <b>12.6</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 4           | 3         | 3.5                                  | <b>12.6</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 4           | 3         | 3.5                                  | <b>12.6</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 4           | 3         | 3.5                                  | <b>12.6</b> |            |           |             |         |

Overloading of trucks impact road infrastructure

|                       |          |        |  |             |           | Significance                       |             |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|-------------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 3                     | 5        | 5      | 4.3                                    | 2           | 3         | 2.5                                | <b>10.8</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 3                     | 5        | 5      | 4.3                                    | 2           | 3         | 2.5                                | <b>10.8</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 3                     | 5        | 5      | 4.3                                    | 2           | 3         | 2.5                                | <b>10.8</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 3                     | 5        | 5      | 4.3                                    | 2           | 3         | 2.5                                | <b>10.8</b> |            |           |             |         |

Increased income generated within the Tokologo municipal area (**Positive Impact**)

|                              |          |        |  |             |           | Significance                     |           |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|-----------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low       | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9   | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |

Contribution of mine to local economic development (**Positive Impact**)

|                              |          |        |  |             |           | Significance                     |           |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|-----------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low       | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9   | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |

**BACKFILLING OF EXCAVATIONS:**

Dust nuisance generated as a result of the rehabilitation/landscaping activities

|                    |          |        |  |             |           | Significance                                 |            |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--|------------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                                   | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | <b>3.2</b> |            |           |             |         |

Noise nuisance caused by machinery during the decommissioning phase.

|                    |          |        |  |             |           | Significance                         |            |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--------------------------------------|------------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                           | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |

Potential safety risk posed by unrehabilitated excavations.

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 5        | 1      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |

Potential increase in the risk of soil erosion from reinstated but denuded areas

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | 13.5    |            |           |             |         |

Potential infestation of the reinstated areas by weeds and invader plant species

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | 10.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | 10.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | 10.5    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | 10.5    |            |           |             |         |

Potential contamination of environment as a result of improper waste disposal

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |

Return of the rehabilitated area to agricultural land use (Positive Impact)

|                              |          |        |  |             |           | Significance                     |         |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|---------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |

REHABILITATION OF PROCESSING AREA:

Dust nuisance generated as a result of the rehabilitation/landscaping activities

|                    |          |        |  |             |           | Significance                                 |         |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--|---------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                                   | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | 3.2     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | 3.2     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | 3.2     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2  | 3.2     |            |           |             |         |



Noise nuisance caused by machinery during the decommissioning phase.

|                    |          |        |  |             |           | Significance                         |            |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--------------------------------------|------------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                           | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |            |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 3           | 1         | 2                                    | <b>3.2</b> |            |           |             |         |

Potential increase in the risk of soil erosion from reinstated but denuded areas

|                       |          |        |  |             |           | Significance                       |             |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|-------------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | <b>13.5</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | <b>13.5</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | <b>13.5</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 4           | 5         | 4.5                                | <b>13.5</b> |            |           |             |         |

Potential infestation of the reinstated areas by weeds and invader plant species

|                       |          |        |  |             |           | Significance                       |             |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|-------------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | <b>10.5</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | <b>10.5</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | <b>10.5</b> |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |             |            |           |             |         |
| 4                     | 4        | 1      | 3                                      | 5           | 2         | 3.5                                | <b>10.5</b> |            |           |             |         |

Potential contamination of environment as a result of improper waste disposal

|                       |          |        |  |             |           | Significance                       |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                                | 14.9    |            |           |             |         |

Potential use of the settling ponds for water storage or aquaculture purposes (**Positive Impact**)

|                       |          |        |  |             |           | Significance                     |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|----------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                       | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9    |            |           |             |         |

Return of the rehabilitated area to agricultural land use (**Positive Impact**)

|                              |          |        |  |             |           | Significance                     |         |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|---------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |

**vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks**

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

**Methodology for the assessment of the potential environmental, social and cultural impacts**

**DEFINITIONS AND CONCEPTS:**

**Environmental significance:**

The concept of significance is at the core of impact identification, evaluation and decision-making. The concept remains largely undefined and there is no international consensus on a single definition. The following common elements are recognized from the various interpretations:

- ◆ Environmental significance is a value judgment
- ◆ The degree of environmental significance depends on the nature of the impact
- ◆ The importance is rated in terms of both biophysical and socio-economic values
- ◆ Determining significance involves the amount of change to the environment perceived to be acceptable to affected communities.

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of acceptability) (DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5).

The concept of risk has two dimensions, namely the consequence of an event or set of circumstances, and the likelihood of particular consequences being realized (Environment Australia (1999) Environmental Risk Management).

**Impact**

The positive or negative effects on human well-being and / or the environment.

**Consequence**

The intermediate or final outcome of an event or situation OR it is the result, on the environment, of an event.

**Likelihood**

A qualitative term covering both probability and frequency.

**Frequency**

The number of occurrences of a defined event in a given time or rate.

**Probability**

The likelihood of a specific outcome measured by the ratio of a specific outcome to the total number of possible outcomes.

**Environment**

Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation (ISO 14004, 1996).

**Methodology that will be used**

The environmental significance assessment methodology is based on the following determination:

**Environmental Significance = Overall Consequence X Overall Likelihood**

**Determination of Overall Consequence**

Consequence analysis is a mixture of quantitative and qualitative information and the outcome can be positive or negative. Several factors can be used to determine consequence. For determining the environmental significance in terms of consequence, the following factors were chosen: **Severity/Intensity, Duration and Extent/Spatial Scale**. Each factor is assigned a rating of 1 to 5, as described in the tables below.

**Determination of Severity / Intensity**

**Severity** relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment.

Table 1 will be used to obtain an overall rating for severity, taking into consideration the various criteria.

Table 15: Table to be used to obtain an overall rating of severity, taking into consideration the various criteria.

| TYPE OF CRITERIA | RATING               |                     |              |                     |            |
|------------------|----------------------|---------------------|--------------|---------------------|------------|
|                  | 1                    | 2                   | 3            | 4                   | 5          |
| Quantitative     | 0-20%                | 21-40%              | 41-60%       | 61-80%              | 81-100%    |
| Qualitative      | Insignificant / Non- | Small / Potentially | Significant/ | Great/ Very harmful | Disastrous |

| TYPE OF CRITERIA   | RATING  |  |  |  |  |
|--|---|--|--|--|--|
|  | 1   | 2  | 3  | 4  | 5  |
|  | harmful   | harmful  | Harmful  |  | Extremely harmful  |
| Social/ Community response   | Acceptable / I&AP satisfied   | Slightly tolerable / Possible objections       | Intolerable/ Sporadic complaints   | Unacceptable / Widespread complaints                   | Totally unacceptable / Possible legal action   |
| Irreversibility  | Very low cost to mitigate/<br>High potential to mitigate impacts to level of insignificance/<br>Easily reversible | Low cost to mitigate                           | Substantial cost to mitigate/<br>Potential to mitigate impacts/<br>Potential to reverse impact | High cost to mitigate                                  | Prohibitive cost to mitigate/<br>Little or no mechanism to mitigate impact<br>Irreversible |
| Biophysical (Air quality, water quantity and quality, waste production, fauna and flora) | Insignificant change / deterioration or disturbance   | Moderate change / deterioration or disturbance | Significant change / deterioration or disturbance  | Very significant change / deterioration or disturbance | Disastrous change / deterioration or disturbance   |

**Determination of Duration**

Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g. remedial action takes place.

*Table 16: Criteria for the rating of duration.*

| RATING | DESCRIPTION                         |
|--------|-------------------------------------|
| 1      | Up to one month                     |
| 2      | One month to three months (quarter) |
| 3      | Three months to one year            |
| 4      | One to ten years                    |
| 5      | Beyond ten years                    |

**Determination of Extent/Spatial Scale**

Extent or spatial scale is the area affected by the event, aspect or impact.

*Table 17: Criteria for the rating of extent / spatial scale.*

| RATING | DESCRIPTION                                 |
|--------|---|
| 1      | Immediate, fully contained area             |
| 2      | Surrounding area                            |
| 3      | Within Business Unit area of responsibility |
| 4      | Within the farm/neighbouring farm area      |
| 5      | Regional, National, International           |

**Determination of Overall Consequence**

Overall consequence is determined by adding the factors determined above and summarized below, and then dividing the sum by 3.

*Table 18: Example of calculating overall consequence.*

| CONSEQUENCE  | RATING     |
|--|------------|
| Severity   | Example 4  |
| Duration   | Example 2  |
| Extent   | Example 4  |
| <b>SUBTOTAL</b>                                      | <b>10</b>  |
| <b>TOTAL CONSEQUENCE:</b><br>(Subtotal divided by 3) | <b>3.3</b> |

**Determination of Likelihood:**

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described below and in tables 6 and 7.

**Determination of Frequency**

Frequency refers to how often the specific activity, related to the event, aspect or impact, is undertaken.

*Table 19: Criteria for the rating of frequency.*

| RATING | DESCRIPTION                               |
|--------|---|
| 1      | Once a year or once/more during operation |
| 2      | Once/more in 6 Months                     |
| 3      | Once/more a Month                         |
| 4      | Once/more a Week                          |
| 5      | Daily                                     |



**Determination of Probability**

Probability refers to how often the activity or aspect has an impact on the environment.

*Table 20: Criteria for the rating of probability.*

| RATING | DESCRIPTION                           |
|--------|---------------------------------------|
| 1      | Almost never / almost impossible      |
| 2      | Very seldom / highly unlikely         |
| 3      | Infrequent / unlikely / seldom        |
| 4      | Often / regularly / likely / possible |
| 5      | Daily / highly likely / definitely    |

**Overall Likelihood**

Overall likelihood is calculated by adding the factors determined above and summarized below, and then dividing the sum by 2.

*Table 21: Example of calculating overall likelihood.*

| CONSEQUENCE  | RATING    |
|--|-----------|
| Frequency  | Example 4 |
| Probability  | Example 2 |
| <b>SUBTOTAL</b>                                    | <b>6</b>  |
| <b>TOTAL LIKELIHOOD</b><br>(Subtotal divided by 2) | <b>3</b>  |

**Determination of Overall Environmental Significance:**

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of **LOW, LOW-MEDIUM, MEDIUM, MEDIUM-HIGH** or **HIGH**, as shown in the table below.

*Table 22: Determination of overall environmental significance.*

| SIGNIFICANCE RISK                        | OR | LOW     | LOW-MEDIUM | MEDIUM    | MEDIUM-HIGH | HIGH    |
|--|----|---------|------------|-----------|-------------|---------|
| Overall Consequence x Overall Likelihood |    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 – 19.9   | 20 - 25 |

**Qualitative description or magnitude of Environmental Significance**

This description is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritizations and decision making process associated with this event, aspect or impact.



Table 23: Description of environmental significance and related action required.

| SIGNIFICANCE     | LOW  | LOW-MEDIUM  | MEDIUM  | MEDIUM-HIGH  | HIGH  |
|------------------|--|---|---|--|---|
| Impact Magnitude | Impact is of very low order and therefore likely to have very little real effect.<br>Acceptable. | Impact is of low order and therefore likely to have little real effect.<br>Acceptable.  | Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company                  | Impact is real and substantial in relation to other impacts. Pose a risk to the company.<br>Unacceptable | Impact is of the highest order possible.<br>Unacceptable. Fatal flaw. |
| Action Required  | Maintain current management measures.<br>Where possible improve.                                 | Maintain current management measures.<br>Implement monitoring and evaluate to determine potential increase in risk.<br>Where possible improve | Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible. | Improve management measures to reduce risk.  | Implement significant mitigation measures or implement alternatives.  |

Based on the above, the significance rating scale has been determined as follows:

- High**                      Of the highest order possible within the bounds of impacts, which could occur. In the case of negative impacts, there would be no possible mitigation and / or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.
- Medium-High**            Impacts of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.
- Medium**                    Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and easily possible, In case of positive impacts; other means of achieving these benefits would be about equal in time, cost and effort.
- Low-Medium**            Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts alternative means for achieving this benefit would likely be easier,

cheaper, more effective, less time-consuming, or some combination of these.

|               |   |
|---------------|---|
| Low           | Impact would be negligible. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of positive impacts, alternative means would almost all likely be better, in one or a number of ways, than this means of achieving the benefit |
| Insignificant | There would be a no impact at all – not even a very low impact on the system or any of its parts.   |

**vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected**

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

The preferred Site Layout alternative identified by the Applicant, named Site Layout alternative 1 in this document, entails the mining of an area that corresponds to the approved prospecting right (FS30/5/1/1/2/449PR) area. SA1 was identified during the planning phase by the Applicant and project team, as the preferred and only viable Site Layout alternative based on the evaluation of the prospecting results and due to the following:

- The prospecting results (to date) have shown that the prospecting footprint area has a high potential to yield diamondiferous gravel. Prospecting has however also shown that the presence of diamondiferous gravel is highly variable and cannot be projected based on the amount of prospecting done to date. The Applicant therefore desires the proposed mining right to incorporate the entire prospecting right area as this will allow additional time for prospecting and mining of the resource within the remaining footprint.
- The property owners of the earmarked area, and the Applicant has existing surface right agreements that can be renewed and honoured should the mining right be issued.
- Although a Site Layout alternative for the major mining area (3 955.7022 ha) is not deemed viable, site alternatives are possible within the boundary of the major mining area, as the minor areas (±2 ha) will be moved in between areas of agricultural importance, buffer zones and no-go areas, and any other sensitive areas identified during the EIA process. Exclusion areas will be defined in the environmental impact assessment report.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible (Appendix A: Map 4 of appendix H):

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.

- All of the lateral drainage lines which flow into the Vaal River including a 100m buffer.
- The pan systems occurring on the site, including small and degraded pans including a 100m buffer.
- Portions of Camel Thorn (*Vachellia erioloba*) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.

Site alternative 2 was therefore included as per the above study in order to excluded the sensitive areas and found to be the preferred as the proposed alternative will not necessitate the loss of sensitive areas.

Project Alterative 1 entails the winning of alluvial diamonds and gold from minor areas ( $\pm 2$  ha) to be operated within the footprint of the major footprint area (3 955.7022 ha). The current project alternative proposes the simultaneous operation of three (3) minor areas through opencast and strip-mining methods, with the concentrate, recovered at the processing plant, transported to an off-site recovery plant. The operation of all minor areas will be in accordance with the conditions of the surface use agreement to be signed by the Applicant and landowner prior to the commencement of mining. PA1 entails the disturbance of  $\pm 0.15\%$  of the proposed footprint area at any given time as concurrent rehabilitation is proposed. After supplementary information was obtained no additional project alternatives were deemed necessary during the EIA process.

Technology/Design Alternatives: As with the project alternatives, technology and design alternatives was considered during the EIA process. The following technology/design principles was considered by the Applicant and project team:

- The use of permanent infrastructure as opposed to temporary infrastructure;
- The processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant.

The use of permanent infrastructure as opposed to temporary infrastructure as well as processing of the concentrate at a remote recovery plant opposed to the use of a locally

established plant was assessed for the proposed mining but found not environmentally and practically suitable. Therefore, the use of temporary infrastructure as well as the processing of the concentrate at a remote recovery plant was deemed the only viable site alternative as it will have a much lower impact.

Currently, the following potential impacts were identified that may have a negative impact on the receiving environment:

- Increased traffic on public and private access roads;
- Visual intrusion as a result of site establishment;
- Loss of areas of agricultural importance;
- Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area;
- Potential impact on fauna within footprint area;
- Potential impact on areas/infrastructure of heritage or cultural concern;
- Potential impact on existing infrastructure within the footprint area;
- Dust nuisance caused by the disturbance of soil;
- Noise nuisance caused by earthmoving machinery and processing infrastructure;
- Potential infestation of the topsoil heaps with weeds or invader plant species;
- Loss/contamination of stockpiled topsoil;
- Potential contamination of construction area and surface runoff as a result of hydrocarbon spillages;
- Potential erosion of denuded areas;
- Safety risk posed by open excavations and settling ponds;
- Potential flooding of excavations;
- Degradation of access roads;
- Increased water use within the study area;
- Overloading of trucks impact road infrastructure; and
- Potential contamination of environment as a result of improper waste disposal.

The potential positive impacts associated with the proposed project includes:

- Increased and continued work opportunities to local residents.
- Diversified income to landowners.
- Contribution of mine to local economic development.
- Return of the rehabilitated area to agricultural land use; and
- Potential use of the settling ponds for water storage or aquaculture purposes.

**Potential Negative Impacts Associated with SL1, SL2; TD1 and TD2**

The following table shows the potential negative impacts associated with SL1, SL2, TD1 and TD2 that were identified during the EIA:

Table 24: List of potential negative impacts associated with SL1,SL2, TD1, TD2.

| ACTIVITY  | POTENTIAL IMPACT  | SIGNIFICANCE (BEFORE MITIGATION)  | SIGNIFICANCE (AFTER MITIGATION)   |
|---|---|---|---|
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Cumulative impacts</li> </ul>       | <ul style="list-style-type: none"> <li>◆ Increased traffic on public and private access roads</li> <li>◆ Visual intrusion as a result of site establishment</li> <li>◆ Loss of areas of agricultural importance</li> <li>◆ Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area</li> <li>◆ Potential impact on fauna within footprint area</li> <li>◆ Potential impact on areas/infrastructure of heritage or cultural concern</li> <li>◆ Potential impact on existing infrastructure within the footprint area.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Cumulative impacts</li> </ul> | <ul style="list-style-type: none"> <li>◆ Dust nuisance caused by the disturbance of soil.</li> <li>◆ Noise nuisance due to stripping and stockpiling of topsoil/overburden Potential infestation of the topsoil heaps with weeds or invader plant species</li> <li>◆ Loss/contamination of stockpiled topsoil</li> <li>◆ Potential contamination of construction area and surface runoff as a result of hydrocarbon spillages</li> <li>◆ Potential erosion of denuded areas.</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Unsafe working environment for employees.</li> <li>◆ Potential flooding of excavations.</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Low – Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>   |

| ACTIVITY   | POTENTIAL IMPACT  | SIGNIFICANCE (BEFORE MITIGATION)  | SIGNIFICANCE (AFTER MITIGATION)   |
|--|---|---|---|
|  | <ul style="list-style-type: none"> <li>◆ Dust nuisance due to the movement of earthmoving equipment.</li> <li>◆ Noise nuisance generated by earthmoving equipment</li> <li>◆ Potential contamination of surface runoff as a result of hydrocarbon spillages.</li> <li>◆ Degradation of access roads.</li> </ul>   | <p>TD1, TD2)</p> <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium - High (SL1, SL2, TD1, TD2)</li> </ul>                    | <p>TD1, TD2)</p> <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>                 |
| <ul style="list-style-type: none"> <li>◆ Processing of gravel</li> </ul>                       | <ul style="list-style-type: none"> <li>◆ Increased water use within the study area.</li> <li>◆ Dust nuisance generated at the processing area.</li> <li>◆ Noise nuisance stemming from the processing activities.</li> <li>◆ Safety risk posed by settling ponds</li> <li>◆ Potential contamination of environment as a result of improper waste disposal.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul> | <ul style="list-style-type: none"> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul> | <ul style="list-style-type: none"> <li>◆ Increased traffic along the public and private access roads.</li> <li>◆ Overloading of trucks impact road infrastructure.</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Medium - High (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Backfilling of excavations</li> </ul>                 | <ul style="list-style-type: none"> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities.</li> <li>◆ Noise nuisance caused by machinery during the decommissioning phase.</li> <li>◆ Potential safety risk posed by rehabilitated excavations.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>  |

| ACTIVITY  | POTENTIAL IMPACT  | SIGNIFICANCE (BEFORE MITIGATION)   | SIGNIFICANCE (AFTER MITIGATION)  |
|---|---|--|--|
|   | <ul style="list-style-type: none"> <li>◆ Potential increase in the risk of soil erosion from reinstated but denuded areas.</li> <li>◆ Potential infestation of the reinstated areas by weeds and invader plant species.</li> <li>◆ Potential contamination of environment as a result of improper waste disposal.</li> </ul>  | <p>TD1, TD2)</p> <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>  | <p>TD1, TD2)</p> <ul style="list-style-type: none"> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities.</li> <li>◆ Potential increase in the risk of soil erosion from reinstated but denuded areas.</li> <li>◆ Potential infestation of the reinstated areas by weeds and invader plant species.</li> <li>◆ Potential contamination of environment as a result of improper waste disposal.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul> | <ul style="list-style-type: none"> <li>◆ Low Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul> |

**viii) The possible mitigation measures that could be applied and the level of risk.**

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment / discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

In light of the above listed impacts that may have a negative impact on the study area, the following preliminary mitigation measures are proposed to address/minimize the resulting impacts:

**TOPOGRAPHY**

**Increased traffic on public and private access roads:**

- Mining related equipment must overnight at a designated parking area within the processing area, to reduce the number of vehicles/equipment driving on the public and private access roads.
- The speed of all mining equipment/vehicles must be restrictions to 40 km/h on internal farm roads and 60 km/h on the public roads.
- The mitigation measures associated with this impact must be expanded upon as part of the proposed traffic assessment of the EIA process.

**Visual Mitigation:**

- The site must have a neat appearance and be kept in good condition at all times.

- Mining equipment must be stored neatly in dedicated areas when not in use;
- The screening of mining infrastructure must be considered;
- The right holder must limit vegetation removal, and stripping of topsoil may only be done immediately prior to the mining/use of a specific area;
- The stockpile areas must be managed to prevent excessive storage periods of overburden material;
- Upon decommissioning of a minor area, the site must be rehabilitated and topsoiled to reduce the visual impact of the mining activities and return the area to its prior status.

**Loss of areas of agricultural importance:**

- The exclusion of agricultural active areas must be defined in the surface use agreement, to be signed by the Applicant with each landowner, prior to commencement of the mining activities.
- Upon decommission of a minor area, the disturbed footprint has to be reinstated to its prior or better status, in order to allow it to be used for agricultural purposes.

**Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area:**

- Buffer areas must be demarcated, sign posted and managed as no-go area around wetlands identified within the footprint of any minor area prior to commencement of the mining activities.
- Any channelized flow off of mining areas must be slowed, and storm water management infrastructure must be implemented.
- The mitigation measures associated with this impact must be expanded upon as part of the hydrology assessment and associated EIA process.

**Potential impact on fauna within footprint area:**

- Site management must ensure no fauna is caught, killed, harmed, sold or played with at the mining area;
- Workers must be instructed to report any animals that may be trapped in the working area;
- No snares may be set or nests raided for eggs or young;
- The mitigation measures associated with this impact must be expanded upon as part of the ecological assessment and associated EIA process.

**Potential impact on areas/infrastructure of heritage or cultural concern:**



- If during the pre-site establishment phase, site establishment-, operations- or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager;
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area;
- The senior on-site Manager must inform the ECO (within the first hour of discovery) of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the South African Heritage Resources Agency (SAHRA);
- Work may only commence once the area was cleared by SAHRA;
- The mitigation measures associated with this impact must be expanded upon as part of the heritage- and palaeontological impact assessment and associated EIA process.

**Mitigation of negative impacts to existing infrastructure:**

- Mining may not endanger/damage the existing infrastructure on the farms within the mining boundary without prior written permission obtained from the land/infrastructure owner. Such permission must be filed for auditing purposes.
- Damage caused to non-mining related infrastructure due to mining related activities must be repaired/replaced by the Applicant on his/her own cost.

**Dust emissions associated with the project:**

- The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents.
- The roads and stockpile areas must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCB's (e.g. DAS products) if dust is generated above acceptable limits.
- The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- Speed on the gravel roads must be limited to 40 km/h to prevent the generation of excessive dust.
- Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to mining.
- Topsoil stockpiles must be covered alternatively planted with indigenous grass species to minimize exposed surface areas, and reduce windblown dust from the site. The

vegetation will further assist in capturing wind born dust and minimizing the spread of dust from the site.

- The Applicant must implement a dust management plan and conduct fall-out dust monitoring (if deemed necessary) on site to accurately determine the site specific dust levels.
- Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during windy periods will reduce airborne dust and resulting impacts.
- Dust generated from the stripping of topsoil and mining operations shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).
- Best practice measures shall be implemented during the stripping of topsoil, processing and stockpiling activities in order to minimize potential dust impacts.

**Noise mitigation measures:**

- All mining related vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).
- Best practice measures shall be implemented in order to minimize potential noise impacts.
- The Applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- Employees will not be allowed to reside on site.
- No loud music may be allowed on site.
- A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA, 2004, SANS 10103:2008.

**Weeds and invader plants mitigation measures:**

- An invasive plant species management plan must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the mining activities.
- Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
  - The plants can be uprooted, felled or cut off and can be destroyed completely.

- The plants can be treated chemically by a registered PCO through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.
- All stockpiles must be kept free of weeds.

**Loss/contamination of stockpiled topsoil:**

- The first 300 mm of topsoil must be removed and stored within a designated, signposted stockpile area. Stockpiled topsoil must be protected from erosion and mixing with other material. The topsoil must be used to cover the rehabilitated area and improve the establishment of natural vegetation;
- Topsoil stockpiles must be kept free of weeds;
- Topsoil stockpiles must be placed on a levelled area and measures must be implemented to safeguard the piles from being washed away in the event of heavy rains/storm water;
- Topsoil heaps may not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen;
- Storm- and runoff water must be diverted around the stockpile area to prevent erosion.

**Waste Management:**

- Regular vehicle maintenance must be done at the site workshop. If emergency repairs are required on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200 liter closed container/bin to be removed from the emergency service area to the workshop in order to ensure proper disposal.
- Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.
- Spills must be cleaned up immediately (within the first hour of occurrence) to the satisfaction of the Regional Manager (DMRE) by removing the spillage together with the polluted soil and by disposing it at a recognized facility. Proof must be filed.
- Suitable covered receptacles must be available at all times and conveniently placed for the disposal of waste.
- Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc, must be stored in a container with a closable lid at a collecting point to be collected at least once a month and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the mine area.
- Biodegradable refuse must be handled as indicated above.

**Storm water handling:**

- Storm water must be diverted around the topsoil heaps, mining area and access roads to prevent erosion and loss of material.
- All activities must be conducted only in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose:
  - Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems.
  - Dirty water must be collected and contained in a system separate from the clean water system.
  - Dirty water must be prevented from spilling or seeping into clean water systems.
  - A storm water management plan must apply for the entire life cycle of the mine and over different hydrological cycles (rainfall patterns).
  - The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into the storm water management plan.

**Safety risk posed by open excavations and settling ponds:**

- All operations must comply with the Mine Health and Safety Act, 1993 (Act No 85 of 1993).
- Signage warning the public of the mining area must comply with the requirements of the Mine Health and Safety Act, 1993.
- All operational minor areas must be fenced with an access control gated entrance.
- The settling ponds must be fenced with animal proof fencing to prevent the drowning of fauna that gets stuck in the settling ponds.
- Excavations must be backfilled as soon as the diamondiferous gravel was removed from the pit and the excavation is no longer needed.

**Potential flooding of excavations:**

- No equipment may park overnight within the excavations.
- Should the excavations be flooded by rainwater, the release of the water must be such that it does not cause erosion of the release area. The speed of water must be controlled and the damming of water within close proximity to the excavation must be avoided.

**Management of access roads:**

- Storm water must be diverted around the access road to prevent erosion.
- Vehicular movement must be restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.
- Rutting and erosion of the access road caused as a result of the mining activities must be repaired by the mining right holder.

**Mitigation of Overloading:**

- A weighing device must be installed at the mining area to prevent overloading;
- Proof of load weights must be filed and be available for auditing by relevant officials.

**Rehabilitation of the excavations in each minor area:**

- Rocks and coarse material removed during the excavation phase must be dumped into the excavation, and the excavation must be backfilled to its prior status.
- No waste may be permitted to be deposited into the excavations.
- Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.
- The area must be fertilized if necessary to allow vegetation to establish rapidly. The site must be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analyzed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.
- The mitigation measures associated with these impacts must be expanded upon as part of the closure plan and EIA process.

**Rehabilitation of the mining related infrastructure in each minor area:**

- Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed / alien clearing.
- All infrastructure, temporary equipment and other items used during the mining period shall be removed from the site (section 44 of the MPRDA).
- Waste material of any description, including receptacles, scrap, rubble and tyres, shall be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.

- Weed / Alien clearing will be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) must be managed and controlled on site on an ongoing basis;
- Final rehabilitation shall be completed within a period specified by the Regional Manager.
- The mitigation measures associated with these impacts must be expanded upon as part of the closure plan and EIA process.

## **GENERAL**

### **Waste Management:**

- ◆ Regular vehicle maintenance, repairs and services may only take place at the off-site workshop and service area. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal.
- ◆ The MR Holder must ensure that employees make use of the formal ablution facilities at the site offices, alternatively the employees must be provided with a chemical toilet that must be serviced at least once a week by an accredited liquid waste handling contractor.
- ◆ The use of any temporary, chemical toilet facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the MR holder.
- ◆ If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.
- ◆ Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site.
- ◆ Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.
- ◆ Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.

- ◆ Suitable covered receptacles must be available at all times and conveniently placed for the disposal of waste.
- ◆ Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap etc., must be stored in a container with a closable lid at a collecting point to be collected at least once a month and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the mine area;
- ◆ Biodegradable refuse must be handled as indicated above;
- ◆ No waste may be buried or burned on the site.
- ◆ Re-use or recycling of waste products must be encouraged on site.
- ◆ It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities is reported to the Department of Water and Sanitation and other relevant authorities.

**Management of Health and Safety Risks:**

- ◆ Adequate ablution facilities and water for human consumption must daily be available on site.
- ◆ Workers must have access to the correct personal protection equipment (PPE) as required by law.
- ◆ All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).

**ix) Motivation where no alternative sites were considered.**

During the EIA process the implementation of site-, project-, technology and design alternatives were assessed and in the circumstance no motivation is required in terms of this heading.

**x) Statement motivating the alternative development location within the overall site.**

(Provide a statement motivating the final site layout that is proposed)

SA1 entails the mining of an area that corresponds with the approved prospecting right area. PA1 entails the winning of alluvial diamonds and gold from minor areas ( $\pm 2$  ha) to be operated within the footprint of the major footprint area (3 955.7022 ha). The current project alternative proposes the simultaneous operation of three (3) minor areas through opencast and strip-mining methods, with the concentrate, recovered at the processing plant, transported to an off-site recovery plant. The operation of all minor areas will be in accordance with the conditions of the surface use agreement to be signed by the Applicant and landowner prior to the commencement of mining.

The alternatives as described above, was identified during the planning phase by the Applicant and project team, as the preferred alternatives based on the evaluation of the prospecting results. The current project proposal allows for the combined land use (agriculture and mining) of the earmarked properties as mining will take place in between the agricultural active areas (pivots, orchards etc.) even though this reduces the available mining area to  $\pm 34\%$  of the 3 955.7022 ha application area.

As mentioned earlier, the operation of minor areas within the footprint of the major mining area will minimize the impact of mining on the receiving environment, as denuded areas will be restricted to  $\pm 6$  ha at any given time. Although the exact position of the minor areas is dependent on prospecting results and the presence of diamondiferous gravel, the current proposal will entail the disturbance of only 0.15% of the mining right area at any given time, as concurrent rehabilitation (strip-mining) is proposed.

It is proposed that the layout of each minor area will in principal correspond to the site layout plan attached as Appendix C.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible (Appendix A: Map 4 of appendix H):

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.
- All of the lateral drainage lines which flow into the Vaal River including a 100m buffer.
- The pan systems occurring on the site, including small and degraded pans including a 100m buffer.
- Portions of Camel Thorn (*Vachellia erioloba*) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.

Site Layout alternative 2 was therefore included as per the above study in order to excluded the sensitive areas and found to be the preferred as the proposed alternative will not necessitate the loss of sensitive areas.

Technology/Design Alternatives: As with the project alternatives, technology and design alternatives was considered during the EIA process. The following technology/design principles was considered by the Applicant and project team:

- The use of permanent infrastructure as opposed to temporary infrastructure;
- The processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant.
- The use of permanent infrastructure as opposed to temporary infrastructure as well as processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant was assessed for the proposed mining but found not environmentally and practically suitable. Therefore, the use of temporary infrastructure as well as the



processing of the concentrate at a remote recovery plant was deemed the only viable site alternative as it will have a much lower impact.

**h) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.**

(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures).

An initial significance rating (listed under v) *Impacts and Risks Identified*) was determined for each potential impact should the mitigation measures proposed in this document not be implemented on-site. The impact assessment process then continued in identifying mitigation measures to address the impact that the proposed mining activity may have on the surrounding environment. The significance rating was again determined for each impact associated with the identified alternatives using the methodology as explained under vi) *Methodology Used in Determining and Ranking the Significance*. The impact ratings listed below was determined for each impact **after** bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

**SITE ESTABLISHMENT AND INFRASTRUCTURE DEVELOPMENT:**

Increased traffic on public and private access roads

|                       |          |        |  |             |           | Significance                      |         |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|-----------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                            |             |           | Likelihood                        | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |  | Probability | Frequency |                                   | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 5         | 4                                 | 14.4    |            |           |             |         |

Visual intrusion as a result of site establishment

|                       |          |        |                                  |             |           | Significance                      |         |            |           |             |         |
|-----------------------|----------|--------|----------------------------------|-------------|-----------|-----------------------------------|---------|------------|-----------|-------------|---------|
|                       |          |        | Consequence                      |             |           | Likelihood                        | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity              | Duration | Extent |                                  | Probability | Frequency |                                   | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b> |             |           | <b>Degree of Mitigation: None</b> |         |            |           |             |         |
| 2                     | 5        | 2      | 3                                | 3           | 5         | 4                                 | 13.5    |            |           |             |         |

|                |   |   |                                 |   |   |   |                            |  |
|----------------|---|---|---------------------------------|---|---|---|----------------------------|--|
| Rating: Medium |   |   | Site Layout Alternative 2       |   |   |   | Degree of Mitigation: None |  |
| 2              | 5 | 2 | 3                               | 3 | 5 | 4 | 13.5                       |  |
| Rating: Medium |   |   | Technology/Design Alternative 1 |   |   |   | Degree of Mitigation: None |  |
| 2              | 5 | 2 | 3                               | 3 | 5 | 4 | 13.5                       |  |
| Rating: Medium |   |   | Technology/Design Alternative 2 |   |   |   | Degree of Mitigation: None |  |
| 2              | 5 | 2 | 3                               | 3 | 5 | 4 | 13.5                       |  |

Loss of areas of agricultural importance

|                     |          |        |                                 |           |            |   | Significance               |            |           |             |         |
|---------------------|----------|--------|---------------------------------|-----------|------------|---|----------------------------|------------|-----------|-------------|---------|
|                     |          |        | Consequence                     |           | Likelihood |   | Low                        | Low-Medium | Medium    | Medium-High | High    |
| Severity            | Duration | Extent | Probability                     | Frequency |            |   | 1 - 4.9                    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| Rating: Low -Medium |          |        | Site Layout Alternative 1       |           |            |   | Degree of Mitigation: None |            |           |             |         |
| 4                   | 5        | 4      | 4.3                             | 3         | 1          | 2 | 8.6                        |            |           |             |         |
| Rating: Low -Medium |          |        | Site Layout Alternative 2       |           |            |   | Degree of Mitigation: None |            |           |             |         |
| 4                   | 5        | 4      | 4.3                             | 3         | 1          | 2 | 8.6                        |            |           |             |         |
| Rating: Low -Medium |          |        | Technology/Design Alternative 1 |           |            |   | Degree of Mitigation: None |            |           |             |         |
| 4                   | 5        | 4      | 4.3                             | 3         | 1          | 2 | 8.6                        |            |           |             |         |
| Rating: Low -Medium |          |        | Technology/Design Alternative 2 |           |            |   | Degree of Mitigation: None |            |           |             |         |
| 4                   | 5        | 4      | 4.3                             | 3         | 1          | 2 | 8.6                        |            |           |             |         |

Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area

|                      |          |        |                                 |           |            |     | Significance                  |            |           |             |         |
|----------------------|----------|--------|---------------------------------|-----------|------------|-----|-------------------------------|------------|-----------|-------------|---------|
|                      |          |        | Consequence                     |           | Likelihood |     | Low                           | Low-Medium | Medium    | Medium-High | High    |
| Severity             | Duration | Extent | Probability                     | Frequency |            |     | 1 - 4.9                       | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| Rating: High         |          |        | Site Layout Alternative 1       |           |            |     | Degree of Mitigation: Partial |            |           |             |         |
| 4                    | 5        | 5      | 4.6                             | 4         | 5          | 4.5 | 20.7                          |            |           |             |         |
| Rating: Low - Medium |          |        | Site Layout Alternative 2       |           |            |     | Degree of Mitigation: Partial |            |           |             |         |
| 3                    | 5        | 4      | 3                               | 2         | 4          | 3   | 9                             |            |           |             |         |
| Rating: Medium       |          |        | Technology/Design Alternative 1 |           |            |     | Degree of Mitigation: Partial |            |           |             |         |
| 5                    | 5        | 5      | 5                               | 3         | 1          | 2   | 10                            |            |           |             |         |
| Rating: Medium       |          |        | Technology/Design Alternative 2 |           |            |     | Degree of Mitigation: Partial |            |           |             |         |
| 5                    | 5        | 5      | 5                               | 3         | 1          | 2   | 10                            |            |           |             |         |

Potential impact on vegetation and listed and protected plant species

|                      |          |        |                                 |           |            |     | Significance                  |            |           |             |         |
|----------------------|----------|--------|---------------------------------|-----------|------------|-----|-------------------------------|------------|-----------|-------------|---------|
|                      |          |        | Consequence                     |           | Likelihood |     | Low                           | Low-Medium | Medium    | Medium-High | High    |
| Severity             | Duration | Extent | Probability                     | Frequency |            |     | 1 - 4.9                       | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| Rating: High         |          |        | Site Layout Alternative 1       |           |            |     | Degree of Mitigation: Partial |            |           |             |         |
| 4                    | 5        | 5      | 4.6                             | 4         | 5          | 4.5 | 20.7                          |            |           |             |         |
| Rating: Low - Medium |          |        | Site Layout Alternative 2       |           |            |     | Degree of Mitigation: Partial |            |           |             |         |
| 3                    | 5        | 4      | 3                               | 2         | 4          | 3   | 9                             |            |           |             |         |
| Rating: Medium       |          |        | Technology/Design Alternative 1 |           |            |     | Degree of Mitigation: Partial |            |           |             |         |

|                |   |   |                                 |   |   |                               |    |
|----------------|---|---|---------------------------------|---|---|-------------------------------|----|
| 5              | 5 | 5 | 5                               | 3 | 1 | 2                             | 10 |
| Rating: Medium |   |   | Technology/Design Alternative 2 |   |   | Degree of Mitigation: Partial |    |
| 5              | 5 | 5 | 5                               | 3 | 1 | 2                             | 10 |

Potential impact on fauna within footprint area

| Severity    | Duration | Extent | Consequence                     | Probability | Frequency | Likelihood                 | Significance |            |           |             |         |
|-------------|----------|--------|---------------------------------|-------------|-----------|----------------------------|--------------|------------|-----------|-------------|---------|
|             |          |        |                                 |             |           |                            | Low          | Low-Medium | Medium    | Medium-High | High    |
|             |          |        |                                 |             |           |                            | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| Rating: Low |          |        | Site Layout Alternative 1       |             |           | Degree of Mitigation: None |              |            |           |             |         |
| 2           | 5        | 2      | 3                               | 2           | 1         | 1.5                        | 4.5          |            |           |             |         |
| Rating: Low |          |        | Site Layout Alternative 2       |             |           | Degree of Mitigation: None |              |            |           |             |         |
| 2           | 5        | 2      | 3                               | 2           | 1         | 1.5                        | 4.5          |            |           |             |         |
| Rating: Low |          |        | Technology/Design Alternative 1 |             |           | Degree of Mitigation: None |              |            |           |             |         |
| 2           | 5        | 2      | 3                               | 2           | 1         | 1.5                        | 4.5          |            |           |             |         |
| Rating: Low |          |        | Technology/Design Alternative 2 |             |           | Degree of Mitigation: None |              |            |           |             |         |
| 2           | 5        | 2      | 3                               | 2           | 1         | 1.5                        | 4.5          |            |           |             |         |

Potential impact on areas/infrastructure of heritage or cultural concern

| Severity            | Duration | Extent | Consequence                     | Probability | Frequency | Likelihood                            | Significance |            |           |             |         |
|---------------------|----------|--------|---------------------------------|-------------|-----------|---------------------------------------|--------------|------------|-----------|-------------|---------|
|                     |          |        |                                 |             |           |                                       | Low          | Low-Medium | Medium    | Medium-High | High    |
|                     |          |        |                                 |             |           |                                       | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| Rating: Low -Medium |          |        | Site Layout Alternative 1       |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |
| 5                   | 5        | 5      | 5                               | 1           | 1         | 1                                     | 5            |            |           |             |         |
| Rating: Low -Medium |          |        | Site Layout Alternative 2       |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |
| 5                   | 5        | 5      | 5                               | 1           | 1         | 1                                     | 5            |            |           |             |         |
| Rating: Low -Medium |          |        | Technology/Design Alternative 1 |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |
| 5                   | 5        | 5      | 5                               | 1           | 1         | 1                                     | 5            |            |           |             |         |
| Rating: Low -Medium |          |        | Technology/Design Alternative 2 |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |
| 5                   | 5        | 5      | 5                               | 1           | 1         | 1                                     | 5            |            |           |             |         |

Potential impact on existing infrastructure within the footprint area.

| Severity    | Duration | Extent | Consequence                     | Probability | Frequency | Likelihood                            | Significance |            |           |             |         |
|-------------|----------|--------|---------------------------------|-------------|-----------|---------------------------------------|--------------|------------|-----------|-------------|---------|
|             |          |        |                                 |             |           |                                       | Low          | Low-Medium | Medium    | Medium-High | High    |
|             |          |        |                                 |             |           |                                       | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| Rating: Low |          |        | Site Layout Alternative 1       |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |
| 3           | 5        | 4      | 3                               | 2           | 1         | 1.5                                   | 4.5          |            |           |             |         |
| Rating: Low |          |        | Site Layout Alternative 2       |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |
| 3           | 5        | 4      | 3                               | 2           | 1         | 1.5                                   | 4.5          |            |           |             |         |
| Rating: Low |          |        | Technology/Design Alternative 1 |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |
| 3           | 5        | 4      | 3                               | 2           | 1         | 1.5                                   | 4.5          |            |           |             |         |
| Rating: Low |          |        | Technology/Design Alternative 2 |             |           | Degree of Mitigation: Fully Mitigated |              |            |           |             |         |

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|   |   |   |   |   |   |     |     |
|---|---|---|---|---|---|-----|-----|
| 3 | 5 | 4 | 3 | 2 | 1 | 1.5 | 4.5 |
|---|---|---|---|---|---|-----|-----|

Increased and continued work opportunities to local residents (**Positive Impact**)

|                              |          |        |  |             |           | Significance                     |           |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|-----------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low       | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9   | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |

Diversified income to landowners (**Positive Impact**)

|                              |          |        |  |             |           | Significance                     |           |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|-----------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low       | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9   | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 3      | 3                                      | 5           | 3         | 4                                | <b>12</b> |            |           |             |         |

**STRIPPING AND STOCKPILING OF TOPSOIL OF THE MINING AREA:**

Dust nuisance caused by the disturbance of soil

|                            |          |        |  |             |           | Significance                                 |          |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|--|----------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                                   | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |

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 Noise nuisance caused by earthmoving machinery



|                             |          |        |  |             |           | Significance                         |          |            |           |             |         |
|-----------------------------|----------|--------|--|-------------|-----------|--------------------------------------|----------|------------|-----------|-------------|---------|
|                             |          |        | Consequence                            |             |           | Likelihood                           | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                    | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |

Potential infestation of the topsoil heaps with weeds or invader plant species

|                            |          |        |  |             |           | Significance                       |            |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|------------------------------------|------------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                         | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 1                          | 5        | 3      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 1                          | 5        | 3      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low-Medium</b>  |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 1                          | 5        | 3      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low-Medium</b>  |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 1                          | 5        | 3      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |

Loss/contamination of stockpiled topsoil

|                            |          |        |  |             |           | Significance                                 |          |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|--|----------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                                   | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |

Potential contamination of construction area and surface runoff as a result of hydrocarbon spillages

|                           |          |        |  |             |           | Significance                       |            |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|------------|------------|-----------|-------------|---------|
|                           |          |        | Consequence                            |             |           | Likelihood                         | Low        | Low-Medium | Medium    | Medium-High | High    |
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9    | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |            |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | <b>7.5</b> |            |           |             |         |

Potential impact on vegetation and listed and protected plant species

|                             |          |        |  |             |           | Significance                         |             |            |           |             |         |
|-----------------------------|----------|--------|--|-------------|-----------|--------------------------------------|-------------|------------|-----------|-------------|---------|
|                             |          |        | Consequence                            |             |           | Likelihood                           | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity                    | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: High</b>         |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 4                           | 5        | 5      | 4.6                                    | 4           | 5         | 4.5                                  | <b>20.7</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 3                           | 5        | 4      | 3                                      | 2           | 4         | 3                                    | <b>9</b>    |            |           |             |         |
| <b>Rating: Medium</b>       |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                           | 5        | 5      | 5                                      | 3           | 1         | 2                                    | <b>10</b>   |            |           |             |         |
| <b>Rating: Medium</b>       |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 5                           | 5        | 5      | 5                                      | 3           | 1         | 2                                    | <b>10</b>   |            |           |             |         |

Potential erosion of denuded areas.

|                            |          |        |  |             |           | Significance                                 |          |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|--|----------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                                   | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 3                          | 5        | 1      | 3                                      | 2           | 2         | 2  | <b>6</b> |            |           |             |         |

**EXCAVATION AND LOADING:**

Safety risk posed by open excavations.

|                           |          |        |  |           |            |     | Significance                                 |            |           |             |         |
|---------------------------|----------|--------|--|-----------|------------|-----|--|------------|-----------|-------------|---------|
|                           |          |        | Consequence                            |           | Likelihood |     | Low  | Low-Medium | Medium    | Medium-High | High    |
| Severity                  | Duration | Extent | Probability                            | Frequency |            |     | 1 - 4.9                                      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                         | 5        | 1      | 3                                      | 2         | 3          | 2.5 | <b>7.5</b>                                   |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                         | 5        | 1      | 3                                      | 2         | 3          | 2.5 | <b>7.5</b>                                   |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                         | 5        | 1      | 3                                      | 2         | 3          | 2.5 | <b>7.5</b>                                   |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 3                         | 5        | 1      | 3                                      | 2         | 3          | 2.5 | <b>7.5</b>                                   |            |           |             |         |

Potential flooding of excavations.

|                    |          |        |  |           |            |     | Significance                         |            |           |             |         |
|--------------------|----------|--------|--|-----------|------------|-----|--------------------------------------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |           | Likelihood |     | Low                                  | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent | Probability                            | Frequency |            |     | 1 - 4.9                              | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |           |            |     | <b>Degree of Mitigation: Partial</b> |            |           |             |         |
| 3                  | 1        | 1      | 1.3                                    | 3         | 2          | 2.5 | <b>4</b>                             |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |           |            |     | <b>Degree of Mitigation: Partial</b> |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 2         | 2          | 2   | <b>2.6</b>                           |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |           |            |     | <b>Degree of Mitigation: Partial</b> |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 2         | 2          | 2   | <b>2.6</b>                           |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |           |            |     | <b>Degree of Mitigation: Partial</b> |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 2         | 2          | 2   | <b>2.6</b>                           |            |           |             |         |

Dust nuisance due to the movement of earthmoving equipment.

|                            |          |        |  |           |            |     | Significance                                 |            |           |             |         |
|----------------------------|----------|--------|--|-----------|------------|-----|--|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |           | Likelihood |     | Low  | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent | Probability                            | Frequency |            |     | 1 - 4.9                                      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3         | 2          | 2.5 | <b>5</b>                                     |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3         | 2          | 2.5 | <b>5</b>                                     |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3         | 2          | 2.5 | <b>5</b>                                     |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |           |            |     | <b>Degree of Mitigation: Fully Mitigated</b> |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3         | 2          | 2.5 | <b>5</b>                                     |            |           |             |         |



Noise nuisance generated by earthmoving equipment

|                             |          |        | Consequence                            |             |           | Likelihood                           | Significance |            |           |             |         |
|-----------------------------|----------|--------|--|-------------|-----------|--------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity                    | Duration | Extent |  | Probability | Frequency |                                      | Low          | Low-Medium | Medium    | Medium-High | High    |
|                             |          |        |  |             |           |                                      | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | 5            |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | 5            |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | 5            |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | 5            |            |           |             |         |

Potential contamination of surface runoff as a result of hydrocarbon spillages.

|                           |          |        | Consequence                            |             |           | Likelihood                         | Significance |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | Low          | Low-Medium | Medium    | Medium-High | High    |
|                           |          |        |  |             |           |                                    | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | 7.5          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | 7.5          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | 7.5          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 2      | 3                                      | 2           | 3         | 2.5                                | 7.5          |            |           |             |         |

Degradation of access roads.

|                       |          |        | Consequence                            |             |           | Likelihood                                   | Significance |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|--|--------------|------------|-----------|-------------|---------|
| Severity              | Duration | Extent |  | Probability | Frequency |  | Low          | Low-Medium | Medium    | Medium-High | High    |
|                       |          |        |  |             |           |  | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |              |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 2           | 5         | 3.5  | 10.5         |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |              |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 2           | 5         | 3.5  | 10.5         |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |              |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 2           | 5         | 3.5  | 10.5         |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |              |            |           |             |         |
| 2                     | 5        | 2      | 3                                      | 2           | 5         | 3.5  | 10.5         |            |           |             |         |

**INVEST IN PROPERTY 84 (PTY) LTD- FINAL EIAR & EMPR  
PROCESSING OF GRAVEL:**



Increased water use within the study area.

|                     |          |        |  |             |           | Significance                         |             |            |           |             |         |
|---------------------|----------|--------|--|-------------|-----------|--------------------------------------|-------------|------------|-----------|-------------|---------|
|                     |          |        | Consequence                            |             |           | Likelihood                           | Low         | Low-Medium | Medium    | Medium-High | High    |
| Severity            | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9     | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 3                   | 5        | 5      | 4.3                                    | 5           | 5         | 5                                    | <b>21.5</b> |            |           |             |         |
| <b>Rating: High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 3                   | 5        | 5      | 4.3                                    | 5           | 5         | 5                                    | <b>21.5</b> |            |           |             |         |
| <b>Rating: High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 3                   | 5        | 5      | 4.3                                    | 5           | 5         | 5                                    | <b>21.5</b> |            |           |             |         |
| <b>Rating: High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |             |            |           |             |         |
| 3                   | 5        | 5      | 4.3                                    | 5           | 5         | 5                                    | <b>21.5</b> |            |           |             |         |

Dust nuisance generated at the processing area

|                            |          |        |  |             |           | Significance                                 |          |            |           |             |         |
|----------------------------|----------|--------|--|-------------|-----------|--|----------|------------|-----------|-------------|---------|
|                            |          |        | Consequence                            |             |           | Likelihood                                   | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                   | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |
| <b>Rating: Low -Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |          |            |           |             |         |
| 2                          | 2        | 2      | 2                                      | 3           | 2         | 2.5  | <b>5</b> |            |           |             |         |

Noise nuisance stemming from the processing activities

|                             |          |        |  |             |           | Significance                         |          |            |           |             |         |
|-----------------------------|----------|--------|--|-------------|-----------|--------------------------------------|----------|------------|-----------|-------------|---------|
|                             |          |        | Consequence                            |             |           | Likelihood                           | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                    | Duration | Extent |  | Probability | Frequency |                                      | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |
| <b>Rating: Low - Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |          |            |           |             |         |
| 2                           | 2        | 2      | 2                                      | 3           | 2         | 2.5                                  | <b>5</b> |            |           |             |         |

Safety risk posed by settling ponds

|                           |          |        | Consequence                            |             |           | Likelihood                         | Significance |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | Low          | Low-Medium | Medium    | Medium-High | High    |
|                           |          |        |  |             |           |                                    | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                         | 4        | 1      | 2.3                                    | 2           | 5         | 3.5                                | <b>8.05</b>  |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                         | 4        | 1      | 2.3                                    | 2           | 5         | 3.5                                | <b>8.05</b>  |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                         | 4        | 1      | 2.3                                    | 2           | 5         | 3.5                                | <b>8.05</b>  |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                         | 4        | 1      | 2.3                                    | 2           | 5         | 3.5                                | <b>8.05</b>  |            |           |             |         |

Potential contamination of environment as a result of improper waste disposal

|                    |          |        | Consequence                            |             |           | Likelihood                         | Significance |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity           | Duration | Extent |  | Probability | Frequency |                                    | Low          | Low-Medium | Medium    | Medium-High | High    |
|                    |          |        |  |             |           |                                    | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | <b>4</b>     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | <b>4</b>     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | <b>4</b>     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | <b>4</b>     |            |           |             |         |

**TRANSPORT OF CONCENTRATE TO RECOVERY PLANT:**

Increased traffic along the public and private access roads.

|                       |          |        | Consequence                            |             |           | Likelihood                           | Significance |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|--------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity              | Duration | Extent |  | Probability | Frequency |                                      | Low          | Low-Medium | Medium    | Medium-High | High    |
|                       |          |        |  |             |           |                                      | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 3         | 3                                    | <b>10.8</b>  |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 3         | 3                                    | <b>10.8</b>  |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 3         | 3                                    | <b>10.8</b>  |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                     | 5        | 4      | 3.6                                    | 3           | 3         | 3                                    | <b>10.8</b>  |            |           |             |         |

Overloading of trucks impact road infrastructure

|                           |          |        |  |             |           | Significance                       |          |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|----------|------------|-----------|-------------|---------|
|                           |          |        | Consequence                            |             |           | Likelihood                         | Low      | Low-Medium | Medium    | Medium-High | High    |
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9  | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |          |            |           |             |         |
| 2                         | 5        | 5      | 4                                      | 2           | 2         | 2                                  | <b>8</b> |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |          |            |           |             |         |
| 2                         | 5        | 5      | 4                                      | 2           | 2         | 2                                  | <b>8</b> |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |          |            |           |             |         |
| 2                         | 5        | 5      | 4                                      | 2           | 2         | 2                                  | <b>8</b> |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |          |            |           |             |         |
| 2                         | 5        | 5      | 4                                      | 2           | 2         | 2                                  | <b>8</b> |            |           |             |         |

Increased income generated within the Tokologo municipal area (**Positive Impact**)

|                              |          |        |  |             |           | Significance                     |           |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|-----------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low       | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9   | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |           |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | <b>18</b> |            |           |             |         |

Contribution of mine to local economic development (**Positive Impact**)

|                              |          |        | Consequence                            |             |           | Likelihood                       | Significance |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|--------------|------------|-----------|-------------|---------|
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | Low          | Low-Medium | Medium    | Medium-High | High    |
|                              |          |        |  |             |           |                                  | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |

**BACKFILLING OF EXCAVATIONS:**

Dust nuisance generated as a result of the rehabilitation/landscaping activities

|                    |          |        | Consequence                            |             |           | Likelihood                           | Significance |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity           | Duration | Extent |  | Probability | Frequency |                                      | Low          | Low-Medium | Medium    | Medium-High | High    |
|                    |          |        |  |             |           |                                      | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |

Noise nuisance caused by machinery during the decommissioning phase.

|                    |          |        | Consequence                            |             |           | Likelihood                           | Significance |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity           | Duration | Extent |  | Probability | Frequency |                                      | Low          | Low-Medium | Medium    | Medium-High | High    |
|                    |          |        |  |             |           |                                      | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Partial</b> |              |            |           |             |         |
| 2                  | 1        | 1      | 1.3                                    | 3           | 1         | 2                                    | 2.6          |            |           |             |         |

Potential safety risk posed by unrehabilitated excavations.

|                    |          |        | Consequence                            |             |           | Likelihood                         | Significance |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity           | Duration | Extent |  | Probability | Frequency |                                    | Low          | Low-Medium | Medium    | Medium-High | High    |
|                    |          |        |  |             |           |                                    | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 3        | 1      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 3        | 1      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 3        | 1      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 3        | 1      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |

Potential increase in the risk of soil erosion from reinstated but denuded areas

|                           |          |        | Consequence                            |             |           | Likelihood                         | Significance |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | Low          | Low-Medium | Medium    | Medium-High | High    |
|                           |          |        |  |             |           |                                    | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |

Potential infestation of the reinstated areas by weeds and invader plant species

|                           |          |        | Consequence                            |             |           | Likelihood                         | Significance |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | Low          | Low-Medium | Medium    | Medium-High | High    |
|                           |          |        |  |             |           |                                    | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1          |            |           |             |         |

Potential contamination of environment as a result of improper waste disposal

|                    |          |        |  |             |           | Significance                       |         |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4       |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4       |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4       |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4       |            |           |             |         |

Return of the rehabilitated area to agricultural land use (Positive Impact)

|                              |          |        |  |             |           | Significance                     |         |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|---------|------------|-----------|-------------|---------|
|                              |          |        | Consequence                            |             |           | Likelihood                       | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |         |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18      |            |           |             |         |

REHABILITATION OF PROCESSING AREA:

Dust nuisance generated as a result of the rehabilitation/landscaping activities

|                    |          |        |  |             |           | Significance                                 |         |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--|---------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                                   | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |

Noise nuisance caused by machinery during the decommissioning phase.

|                    |          |        |  |             |           | Significance                                 |         |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|--|---------|------------|-----------|-------------|---------|
|                    |          |        | Consequence                            |             |           | Likelihood                                   | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity           | Duration | Extent |  | Probability | Frequency |  | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully Mitigated</b> |         |            |           |             |         |
| 2                  | 1        | 2      | 1.6                                    | 2           | 1         | 1.5  | 2.4     |            |           |             |         |

Potential increase in the risk of soil erosion from reinstated but denuded areas

|                           |          |        |  |             |           | Significance                       |         |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                           |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |

Potential infestation of the reinstated areas by weeds and invader plant species

|                           |          |        |  |             |           | Significance                       |         |            |           |             |         |
|---------------------------|----------|--------|--|-------------|-----------|------------------------------------|---------|------------|-----------|-------------|---------|
|                           |          |        | Consequence                            |             |           | Likelihood                         | Low     | Low-Medium | Medium    | Medium-High | High    |
| Severity                  | Duration | Extent |  | Probability | Frequency |                                    | 1 - 4.9 | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |
| <b>Rating: Low-Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |         |            |           |             |         |
| 3                         | 4        | 1      | 2.6                                    | 2           | 5         | 3.5                                | 9.1     |            |           |             |         |



Potential contamination of environment as a result of improper waste disposal

|                    |          |        | Consequence                            |             |           | Likelihood                         | Significance |            |           |             |         |
|--------------------|----------|--------|--|-------------|-----------|------------------------------------|--------------|------------|-----------|-------------|---------|
| Severity           | Duration | Extent |  | Probability | Frequency |                                    | Low          | Low-Medium | Medium    | Medium-High | High    |
|                    |          |        |  |             |           |                                    | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |
| <b>Rating: Low</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: Fully</b> |              |            |           |             |         |
| 2                  | 4        | 2      | 2                                      | 2           | 2         | 2                                  | 4            |            |           |             |         |

Potential use of the settling ponds for water storage or aquaculture purposes (Positive Impact)

|                       |          |        | Consequence                            |             |           | Likelihood                       | Significance |            |           |             |         |
|-----------------------|----------|--------|--|-------------|-----------|----------------------------------|--------------|------------|-----------|-------------|---------|
| Severity              | Duration | Extent |  | Probability | Frequency |                                  | Low          | Low-Medium | Medium    | Medium-High | High    |
|                       |          |        |  |             |           |                                  | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9         |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9         |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9         |            |           |             |         |
| <b>Rating: Medium</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 4                     | 4        | 2      | 3.3                                    | 4           | 5         | 4.5                              | 14.9         |            |           |             |         |

Return of the rehabilitated area to agricultural land use (Positive Impact)

|                              |          |        | Consequence                            |             |           | Likelihood                       | Significance |            |           |             |         |
|------------------------------|----------|--------|--|-------------|-----------|----------------------------------|--------------|------------|-----------|-------------|---------|
| Severity                     | Duration | Extent |  | Probability | Frequency |                                  | Low          | Low-Medium | Medium    | Medium-High | High    |
|                              |          |        |  |             |           |                                  | 1 - 4.9      | 5 - 9.9    | 10 - 14.9 | 15 - 19.9   | 20 - 25 |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 1</b>       |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Site Layout Alternative 2</b>       |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 1</b> |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |
| <b>Rating: Medium - High</b> |          |        | <b>Technology/Design Alternative 2</b> |             |           | <b>Degree of Mitigation: N/A</b> |              |            |           |             |         |
| 1                            | 5        | 5      | 3.6                                    | 5           | 5         | 5                                | 18           |            |           |             |         |

**i) Assessment of each identified potentially significant impact and risk**

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

Table 25: Assessment of each identified potentially significant impact and risk.

| ACTIVITY  | POTENTIAL IMPACT  | ASPECTS AFFECTED  | PHASE  | SIGNIFICANCE  | MITIGATION TYPE   | SIGNIFICANCE   |
|---|---|---|--|---|---|--|
| <p>Whether listed or not listed.</p> <p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p> | <p>(E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution, etc...etc...etc.)</p> |   | <p>In which impact is anticipated.</p> <p>(E.g. Construction, commissioning, operational Decommissioning closure, post closure.)</p> | <p>If not mitigated.</p>  | <p>(modify, remedy, control, or stop) through</p> <p>(e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc etc)</p> <p>E.g.</p> <p>Modify through alternative method</p> <p>Control through noise control</p> <p>Control through management and monitoring through rehabilitation.</p> | <p>If mitigated.</p>   |
| <p>◆ Demarcation of site with visible beacons.</p>  | <p>◆ No impact could be identified other than the beacons being outside the boundaries of the approved mining area.</p>         | <p>N/A</p>  | <p>Site Establishment phase</p>  | <p>N/A</p>  | <p><u>Control:</u> Implementation of proper housekeeping and site management.</p>   | <p>N/A</p>   |
| <p>◆ Site establishment and infrastructure development</p> <p>◆ Cumulative impacts</p>  | <p>◆ Increased traffic on public and private access roads.</p> <p>◆ Loss of areas of agricultural importance.</p>               | <p>The impact affects the agricultural operations of the property as well as surrounding community.</p> | <p>Site Establishment- &amp; Operational Phase</p>   | <p>◆ Medium (SL1, SL2, TD1, TD2)</p> <p>◆ Low-Medium (SL1, SL2, TD1, TD2)</p> | <p><u>Control:</u> Proper site management, and adherence to legislated conditions as presented in the EA, and other applicable authorisations.</p>  | <p>◆ Medium (SL1, SL2, TD1, TD2)</p> <p>◆ Low-Medium (SL1, SL2, TD1, TD2)</p> <p>◆ High SL1, Low –</p> |

| ACTIVITY   | POTENTIAL IMPACT  | ASPECTS AFFECTED   | PHASE                                   | SIGNIFICANCE   | MITIGATION TYPE   | SIGNIFICANCE   |
|--|---|--|---|--|---|--|
|  | <ul style="list-style-type: none"> <li>Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area.</li> <li>Potential impact on fauna within footprint area.</li> <li>Potential impact on areas/infrastructure of heritage or cultural concern.</li> <li>Potential impact on existing infrastructure within the footprint area</li> </ul> |  |   | <ul style="list-style-type: none"> <li>High SL1, Medium – High SL2 Medium TD1, TD2)</li> <li>Low (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> |   | <ul style="list-style-type: none"> <li>Medium SL2 Medium TD1, TD2)</li> <li>Low (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>Site establishment and infrastructure development</li> <li>Excavation, loading and hauling</li> </ul> | <ul style="list-style-type: none"> <li>Visual intrusion due to site establishment.</li> <li>Visual intrusion associated with the extraction activities..</li> </ul>   | The visual impact may affect the aesthetics of the landscape.      | Site Establishment- & Operational Phase | <ul style="list-style-type: none"> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <u>Control:</u> Proper housekeeping and implementation of progressive rehabilitation.                                   | <ul style="list-style-type: none"> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> </ul>   |
| <ul style="list-style-type: none"> <li>Stripping and stockpiling of topsoil of the mining area</li> </ul>                                    | <ul style="list-style-type: none"> <li>Potential impact on vegetation and listed and protected plant species.</li> </ul>  | This will impact on the biodiversity of the receiving environment. | Site Establishment- & Operational Phase | <ul style="list-style-type: none"> <li>High SL1, Medium – High SL2 Medium TD1, TD2)</li> </ul>   | <u>Control:</u> Implementing the proposed mitigation measures and keeping mining operations to the approved boundaries. | <ul style="list-style-type: none"> <li>High SL1, Low – Medium SL2 Medium TD1, TD2)</li> </ul>  |

| ACTIVITY  | POTENTIAL IMPACT   | ASPECTS AFFECTED   | PHASE  | SIGNIFICANCE  | MITIGATION TYPE  | SIGNIFICANCE   |
|---|--|--|--|---|--|--|
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint area.</li> </ul>   | <p>This will impact on the biodiversity of the receiving environment.</p>                      | <p>Site Establishment &amp; Operational Phase</p>  | <ul style="list-style-type: none"> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>  | <p><u>Control &amp; Stop:</u> Implementing good management practices.</p>  | <ul style="list-style-type: none"> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, loading and hauling</li> </ul> | <ul style="list-style-type: none"> <li>◆ Potential impact on archaeological artefacts or palaeontological finds.</li> <li>◆ Potential impact on archaeological artefacts or palaeontological finds.</li> <li>◆ Potential impact on areas of palaeontological concern.</li> </ul> | <p>This could impact on the cultural and heritage legacy of the receiving environment.</p>     | <p>Site Establishment- and, Operational Phase</p>  | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <p><u>Control &amp; Stop:</u> Implementation of a chance-find procedure.</p>   | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Loss of agricultural land for duration of mining.</li> </ul>  | <p>The impact affects the agricultural operations of the property.</p>                         | <p>Site Establishment- &amp; Operational Phase</p> | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <p>Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint area, only to be reversed upon the closure of the mine. The impact could be controlled through progressive rehabilitation (if possible).</p> | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the</li> </ul>                                     | <p>This impact could affect the hydrology and biodiversity of the surrounding environment.</p> | <p>Site Establishment- and, Operational Phase</p>  | <ul style="list-style-type: none"> <li>◆ High SL1, Medium – High SL2 Medium TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul> | <p><u>Control:</u> Implementing the proposed mitigation measures and keeping mining operations to the approved boundaries.</p>   | <ul style="list-style-type: none"> <li>◆ High SL1, Low – Medium SL2 Medium TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> |

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| ACTIVITY  | POTENTIAL IMPACT   | ASPECTS AFFECTED   | PHASE  | SIGNIFICANCE  | MITIGATION TYPE  | SIGNIFICANCE   |
|---|--|--|--|---|--|--|
| <ul style="list-style-type: none"> <li>Excavation, loading and hauling</li> </ul>   | <p>affected area</p> <ul style="list-style-type: none"> <li>Potential contamination of surface runoff as a result of hydrocarbon spillages</li> </ul>  |  |  |   |  |  |
| <ul style="list-style-type: none"> <li>Stripping and stockpiling of topsoil of the mining area</li> <li>Excavation, loading and hauling Processing, stockpiling and transport of material</li> </ul>    | <ul style="list-style-type: none"> <li>Dust nuisance as a result of stripping and stockpiling of topsoil/overburden.</li> <li>Dust nuisance due to excavation and from loading and vehicles transporting the material.</li> <li>Dust nuisance generated by the processing area and transport of material.</li> <li>Dust nuisance generated as a result of the rehabilitation/landscaping activities</li> </ul> | Increased dust will impact on the air quality of the receiving environment.  | Site Establishment, Operational Phase & Rehabilitation Phase | <ul style="list-style-type: none"> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> </ul> | <u>Control:</u> Dust suppression methods and proper housekeeping.  | <ul style="list-style-type: none"> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>Stripping and stockpiling of topsoil of the mining area</li> <li>Excavation, loading and hauling to processing plant</li> <li>Processing, stockpiling</li> </ul> | <ul style="list-style-type: none"> <li>Noise nuisance due to stripping and stockpiling of topsoil/overburden.</li> <li>Noise as a result of the mining activities.</li> <li>Noise nuisance stemming from operation</li> </ul>  | Should the noise levels become excessive it may have an impact on the noise ambiance of the receiving environment. | Site Establishment- and, Operational Phase                   | <ul style="list-style-type: none"> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> <li>Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <u>Control:</u> Noise suppression methods and proper housekeeping. | <ul style="list-style-type: none"> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> <li>Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>  |

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| ACTIVITY   | POTENTIAL IMPACT   | ASPECTS AFFECTED  | PHASE  | SIGNIFICANCE  | MITIGATION TYPE  | SIGNIFICANCE  |
|--|--|---|--|---|--|---|
| <ul style="list-style-type: none"> <li>and transport of material</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>of the processing plant and transport of material.</li> <li>◆ Noise nuisance caused by machinery during the decommissioning phase</li> </ul>                                  |   |  | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>  |  | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Sloping and landscaping</li> </ul>                 | <ul style="list-style-type: none"> <li>◆ Loss of stockpiled topsoil.</li> <li>◆ Potential erosion of denuded areas.</li> <li>◆ Erosion of returned topsoil after rehabilitation.</li> </ul>                          | Loss of topsoil will affect the rehabilitation success upon closure of the mine.  | Site Establishment, Operational- and Decommissioning Phase   | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> | <u>Control &amp; Remedy:</u> Proper housekeeping and storm water management.   | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Sloping and landscaping</li> </ul>                 | <ul style="list-style-type: none"> <li>◆ Potential infestation of the topsoil heaps and mining area with invader plant species.</li> <li>◆ Infestation of the reinstated area with invader plant species.</li> </ul> | This will impact on the biodiversity of the receiving environment.  | Site Establishment & Operational-, and Decommissioning Phase | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>  | <u>Control:</u> Implementing soil- and invader plant control/management.   | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, loading and hauling</li> </ul>         | <ul style="list-style-type: none"> <li>◆ Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages.</li> <li>◆ Soil contamination from</li> </ul>                            | Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to | Operational-, and Decommissioning Phase                      | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>  | <u>Control &amp; Remedy:</u> Proper housekeeping and implementation of an emergency response plan and waste management plan. | <ul style="list-style-type: none"> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low - Medium (SL1, SL2, TD1,</li> </ul>   |

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| ACTIVITY  | POTENTIAL IMPACT  | ASPECTS AFFECTED  | PHASE                                     | SIGNIFICANCE   | MITIGATION TYPE  | SIGNIFICANCE   |
|---|---|---|---|--|--|--|
| <ul style="list-style-type: none"> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p>hydrocarbon spills.</p> <ul style="list-style-type: none"> <li>◆ Potential contamination of environment due to improper waste management.</li> <li>◆ Potential impact associated with litter/waste left at the mining area.</li> </ul> | the MR Holder.  |   | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul> |  | <p>TD2)</p> <ul style="list-style-type: none"> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Excavation, and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> </ul>           | <ul style="list-style-type: none"> <li>◆ Unsafe working environment for employees.</li> <li>◆ Safety risk posed by un-sloped areas.</li> </ul>  | Unsafe working conditions or health and safety risks posed as a result of the mining activity could affect the employees and possibly the nearby residents. | Operational Phase & Decommissioning Phase | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul> | <u>Control &amp; Modify:</u> All work to take place in accordance with the applicable MHSA and OHSA legislation. | <ul style="list-style-type: none"> <li>◆ Low – Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>    |
| <ul style="list-style-type: none"> <li>◆ Site Establishment</li> <li>◆ Cumulative impacts</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Potential impact on existing infrastructure within the footprint area.</li> </ul>  | This may have an impact on the activities of the affected landowners and result in additional costs to the MR Holder.                                       | Operational Phase                         | <ul style="list-style-type: none"> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> </ul>                                  | <u>Control:</u> Implementation of the mitigation measures proposed in this report.                               | <ul style="list-style-type: none"> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Overloading of trucks impacting road infrastructure.</li> </ul>  | Overloading negatively affects the road infrastructure used by mining related vehicles.   | Operational Phase                         | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>  | <u>Control:</u> No overloading to be allowed.  | <ul style="list-style-type: none"> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Degradation of the</li> </ul>  | Impacting the condition   | Operational                               | <ul style="list-style-type: none"> <li>◆ Medium - High</li> </ul>  | <u>Control &amp; Remedy:</u> Maintaining   | <ul style="list-style-type: none"> <li>◆ Medium (SL1,</li> </ul>   |

INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR



| ACTIVITY                                     | POTENTIAL IMPACT   | ASPECTS AFFECTED  | PHASE             | SIGNIFICANCE                         | MITIGATION TYPE   | SIGNIFICANCE                  |
|--|--|---|-------------------|--------------------------------------|---|-------------------------------|
|  | access roads.  | of public roads may incur public complaints and additional costs to the MR Holder.            | Phase             | (SL1, SL2, TD1, TD2)                 | the farm access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to mining. | SL2, TD1, TD2)                |
| ◆ Transport of concentrate to recovery plant | ◆ Traffic impact on the surrounding gravel roads as a result of the mining activity. | Additional traffic impacts may incur public complaints and additional costs to the MR Holder. | Operational Phase | ◆ Medium - High (SL1, SL2, TD1, TD2) |   | ◆ Medium (SL1, SL2, TD1, TD2) |
| ◆ Cumulative impacts                         | ◆ Mining area negatively affecting safety and security of the surrounding area.      | Safety and security of the receiving environment.   | Operational Phase | ◆ Medium (SL1, SL2, TD1, TD2)        | <u>Control:</u> Implementation of the mitigation measures proposed in this report.  | ◆ Low (SL1, SL2, TD1, TD2)    |

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked Appendix L.



**INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR**

**j) Summary of specialist reports.**

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):

Table 26: Summary of specialist reports.

| LIST OF STUDIES UNDERTAKEN  | RECOMMENDATIONS OF SPECIALIST REPORTS   | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED   |
|---|---|---|---|
| <p><b>Ecological and Wetland Assessment</b></p> <p>Proposed mining for Invest in Property (Pty) Ltd</p> <p>November 2021</p> <p><i>(See Appendix H for a full copy of the document)</i></p> | <p><u>Recommendations</u></p> <ul style="list-style-type: none"> <li>Where mining operations occur, it is important that comprehensive rehabilitation and monitoring of the rehabilitation takes place. It is therefore recommended that a comprehensive rehabilitation and monitoring plan be compiled and strictly adhered to.</li> <li>It is important that the rehabilitation succession and establishment of vegetation be continuously monitored to indicate the success of rehabilitation and the manner to which the original occurring natural vegetation can be re-established. This will also aid in improving or maintaining rehabilitation techniques.</li> <li>Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should</li> </ul> | <p>All the recommendations were incorporated into this report.</p>  | <p>Part A(1)(d)(ii) Description of the activities to be undertaken – 2.2.3 Clearing of Vegetation.</p> <p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity: Hydrology and Geohydrology.</p> <p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity: Biodiversity Conservation Areas.</p> <p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity: Vegetation.</p> <p>Part A(1)(g)(iv)(1)(b) Description of the current land uses.</p> <p>Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site: Site Specific Hydrology and Geohydrology.</p> |

| LIST OF STUDIES UNDERTAKEN | RECOMMENDATIONS OF SPECIALIST REPORTS  | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED   |
|----------------------------|--|---|---|
|                            | <p>be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.</p> <ul style="list-style-type: none"> <li>■ The survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible:                             <ul style="list-style-type: none"> <li>○ The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.</li> <li>○ All of the lateral drainage lines which flow into the Vaal River.</li> <li>○ The pan systems occurring on the site, including small and degraded pans.</li> <li>○ Portions of Camel Thorn (<i>Vachellia erioloba</i>) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.</li> </ul> </li> <li>■ Although remaining natural areas have been shown to be fairly uniform, the mining operations should still aim to minimise the anticipated impact on these areas by confining mining operations to selected and limited areas and should not be implemented indiscriminately</li> </ul> |   | <p>Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site: Site Specific Mining and Biodiversity Conservation Areas.</p> <p>Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site: Site Specific Vegetation.</p> <p>Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site: Site Specific Fauna.</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk: Hydrology and Geohydrology.</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk: Mining, Biodiversity Conservation Areas, and Vegetation.</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk: Fauna.</p> <p>Part A(1)(h) Full description of the</p> |

| LIST OF STUDIES UNDERTAKEN | RECOMMENDATIONS OF SPECIALIST REPORTS   | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED   |
|----------------------------|---|---|---|
|                            | <p>over the entire area.</p> <ul style="list-style-type: none"> <li>■ The study area contains numerous protected species. These consist of protected trees, succulents and geophytes. The following recommendations should be followed for protected species:                             <ul style="list-style-type: none"> <li>○ ▪Where protected tree species (Vachellia erioloba – Camel Thorn) occur in mining areas they should be avoided as far as possible.</li> <li>○ ▪Where this is not possible, permits should be obtained from the relevant authority to remove them. These trees should be replaced during rehabilitation by saplings sourced from seed in the study area.</li> <li>○ Saplings should be cultivated in a small nursery area established on the site. This should also be established/overseen by a suitably qualified person.</li> <li>○ Saplings may require protection and watering during the initial establishment phase.</li> <li>○ The success of establishment should also be continuously monitored.</li> <li>○ Where protected succulent/geophytic species will be affected by mining, permits</li> </ul> </li> </ul> |   | <p>process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity.</p> <p>Part B(1) Mechanisms for monitoring compliance with and performance assessment the environmental management programme and reporting thereon, including</p> <ul style="list-style-type: none"> <li>g) monitoring of impact management actions,</li> <li>h) monitoring and reporting frequency,</li> <li>i) responsible persons,</li> <li>j) time period for implementing impact management actions,</li> <li>k) mechanisms for monitoring compliance.</li> </ul> |

| LIST OF STUDIES UNDERTAKEN | RECOMMENDATIONS OF SPECIALIST REPORTS  | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED |
|----------------------------|--|---|---|
|                            | <p>should be obtained and these transplanted to adjacent or rehabilitated areas where they will remain unaffected.</p> <ul style="list-style-type: none"> <li>○ These species are cryptic and inconspicuous and it is recommended that a walkthrough survey be conducted prior to an area being mined. This should include identification and marking of all protected plants in such an area and should be performed by an ecologist or botanist.</li> <li>○ The transplanting of these species should be overseen by an ecologist, botanist or other suitably qualified person.</li> <li>○ Monitoring of the success of establishment should also be undertaken.</li> </ul> <p>■ The impact of habitat loss and fragmentation on the faunal population should be mitigated by amongst others:</p> <ul style="list-style-type: none"> <li>○ Limiting mining operations to set areas and not mine several areas at the same time.</li> <li>○ Limit the extent of each such mining area.</li> <li>○ Comprehensive and successful rehabilitation of mined areas.</li> <li>○ Exclusion of areas with high sensitivity.</li> </ul> <p>■ Mining operations may affect the mammal population</p> |   |   |

| LIST OF STUDIES UNDERTAKEN | RECOMMENDATIONS OF SPECIALIST REPORTS  | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED |
|----------------------------|--|---|---|
|                            | <p>and care should therefore be taken to ensure none of the faunal species on site is harmed. The hunting, capturing or harming in any way of mammals on the site should not be allowed.</p> <ul style="list-style-type: none"> <li>■ Voids and excavations may also act as pitfall traps to fauna and these should continuously be monitored and any trapped fauna removed and released in adjacent natural areas. This should include mammals, reptiles and amphibians.</li> <li>■ It is recommended that mining activities be excluded from the watercourses and wetlands as far as possible.</li> <li>■ A natural riparian vegetation should be re-instated where this was disturbed/removed.</li> <li>■ Watercourses and wetlands should constantly be monitored for erosion, especially where mining has occurred in close proximity. Where erosion is evident this must be remedied.</li> <li>■ Where steep banks occur and erosion is evidently problematic it is recommended that geotextiles be utilised to stabilise soils. Available options include contouring, berms, gabions and geotextile netting.</li> <li>■ Due to the susceptibility of disturbed areas, especially where watercourses are involved, it is recommended that weed control be judiciously and continually</li> </ul> |   |   |

| LIST OF STUDIES UNDERTAKEN | RECOMMENDATIONS OF SPECIALIST REPORTS  | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED |
|----------------------------|--|---|---|
|                            | <p>practised. Monitoring of weed establishment should form a prominent part of management of the mining areas and should be extended into the rehabilitation phase.</p> <ul style="list-style-type: none"> <li>■ The necessary authorisations must be acquired from Department of Water and Sanitation (DWS) for prospecting within 100 meters or within the floodplain of watercourses and within 500 meters of wetland areas.</li> <li>■ Where roads, haul roads and other infrastructure such as conveyors are required by mining operations, the following should be considered:                             <ul style="list-style-type: none"> <li>○ Where infrastructure cross over watercourses or wetlands, this will require additional authorisation.</li> <li>○ Roads crossing over watercourses should be done with adequate designs which should allow for sufficient flow within these watercourses.</li> <li>○ The minimum of roads and infrastructure should be retained after closure, if any, and roads and infrastructure should be removed and rehabilitated to as natural condition as possible.</li> </ul> </li> <li>■ Following completion of mining in specific areas and</li> </ul> |   |   |

| LIST OF STUDIES UNDERTAKEN  | RECOMMENDATIONS OF SPECIALIST REPORTS   | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED  |
|---|---|---|--|
|   | consequent rehabilitation it is recommended that an extended period of monitoring be initiated which should include monitoring of erosion, bank and bed stability, vegetation and weed establishment and remediating this.  |   |  |
| <p><b>Heritage Impact Assessment</b></p> <p>For the proposed mining right application on the Farms van Aswegens Hoek 493 RD and Greylingslyn 355 RD, Boshoff area, Free State Province.</p> <p>May 2019</p> <p><i>(See Appendix 11 for a full copy of the assessment)</i></p> <p>&amp;</p> <p>Palaeontological Impact Assessment for the proposed mining rights application for mine “84”, near Christiana, Free State Province.</p> <p>March 2019</p> <p><i>(See Appendix 12 for a full copy</i></p> | <p><b><u>Recommendations:</u></b></p> <p>Due to the geographical size of the current prospecting right and the fact that the relatively small impact areas of the proposed mining right have not been confirmed as yet, it was deemed not feasible to conduct fieldwork at this point. Some heritage surveys (Rossouw 2006; Dreyer 2008; Tomose 2016; Van Vollenhoven 2018) were conducted in the greater area and this desktop study is informed by available data for the area. Based on these studies, resources such as archaeological resources, historical finds, cultural landscapes, burials and cemeteries can be expected in the study area. It is therefore recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMPR and based on approval from SAHRA:</p> <ul style="list-style-type: none"> <li>◆ Implementation of a chance find procedure for both heritage and paleontological resources as outlined below.</li> <li>◆ The presence of graves in the study area must be confirmed through the social consultation process.</li> </ul> <p><b><u>Change Find Procedures:</u></b></p> <p>This procedure applies to the developer’s permanent</p> | <p>All the recommendations proposed by the specialist were incorporated into this report.</p>                 | <p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity: <i>Cultural and Heritage Environment.</i></p> <p>Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site: <i>Site Specific Cultural and Heritage Environment.</i></p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk: <i>Archaeological, Heritage and Paleontological Aspects.</i></p> <p>Part A(1)(h) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final</p> |

| LIST OF STUDIES UNDERTAKEN       | RECOMMENDATIONS OF SPECIALIST REPORTS  | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br><br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED  |
|----------------------------------|--|---|--|
| <p><i>of the assessment)</i></p> | <p>employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.</p> <ul style="list-style-type: none"> <li>◆ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</li> <li>◆ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.</li> <li>◆ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.</li> </ul> <p>Based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the loose sands of the Quaternary</p> |   | <p>site layout plan) through the life of the activity.</p> <p>Part A(1)(u)(i)(2) Impact on any national estate referred to in section 3(2) of the NHRA.</p> <p>Part B(1) Mechanisms for monitoring compliance with and performance assessment the environmental management programme and reporting thereon, including</p> <ul style="list-style-type: none"> <li>g) monitoring of impact management actions,</li> <li>h) monitoring and reporting frequency,</li> <li>i) responsible persons,</li> <li>j) time period for implementing impact management actions,</li> <li>k) mechanisms for monitoring compliance.</li> </ul> |



## k) Environmental impact statement

### i) Summary of the key findings of the environmental impact assessment;

The key findings of the environmental impact assessment regarding the proposed mining area entail the following:

#### **Project proposal:**

- Invest in Property 84 (Pty) Ltd applied for environmental authorisation to mine alluvial diamonds and gold from a 3 955.7022 ha area that extends over eight properties in the Lejweleputswa magisterial district of the Free State Province. Even though the project application extends over a vast area, the Applicant proposes to divide the mining right footprint (hereinafter referred to as the “major area”) into smaller mining areas of  $\pm 2$  ha each (hereinafter referred to as the “minor areas”) that will be positioned in between areas of agricultural importance. It is proposed that a maximum of three (3) minor areas will be mined at any given time. In other words, the total footprint to be disturbed by mining activities at any given time calculates to  $\pm 6$  ha of the 3 955.7022 ha mining right area, upon which a mined-out minor area has to be rehabilitated prior to the opening of a subsequent minor area. The current project proposal will entail the disturbance of  $\pm 0.15\%$  of the mining right area (major area) at any given time, as concurrent rehabilitation (strip-mining) is proposed

#### **Visual Characteristics:**

- The presence of mining related infrastructure (i.e. processing infrastructure, settling pond) as well as the excavations will impact on the visual character of the study area.
- As mentioned above the operational phase that is presently expected to entail the simultaneous mining of three (3) minor mining areas within the footprint of the major mining right area. The estimated footprint of a single minor area is proposed to be  $\pm 2$  ha, meaning that the footprint of the operational areas will calculate to a maximum of  $\pm 6$  ha at any given time (should all three minor areas be operating). The mining method to be implemented at each minor area will resemble the current prospecting invasive activities.

- The viewshed analysis showed that the area will be highly visible however the visual impact of the proposed mining operation will be of low significance. The small scale of the proposed operation, as well as the fact that the mining activities will resemble the existing prospecting activities will minimize the visual impact. Should the Applicant successfully rehabilitate the mining area (upon closure), no residual visual impact is expected upon closure of the mine.

#### **Air and Noise Quality:**

- The air and noise ambiance of the study area was historically representative of an agricultural environment in which farming equipment operates with occasional dust emissions from denuded areas. The agricultural use of the study area intensified over years, and current land uses include crop production supported by centre-pivot irrigation, orchards, dryland farming, game and livestock farming, diamond mining, and tourism, all of which contribute to the atmospheric quality and noise ambiance of the study area. A surfaced public road, turning from the R708, cross the proposed mining area, and will be used as main access road. This road follows the Vaal River in a south-western direction.

#### **Geology:**

- The site specific geology and soils of the proposed mining area resembles that of the wider study area as discussed earlier.
- The feasibility study done by Anmic diamonds, in 2016, on a portion of the farm Smithskraal 1519 determined that the thickness of the gravels ranges from 200 mm to 450/500 mm (averaging out at  $\pm 300$  mm). The gravels consist of various varieties of quartz, jasper, agate and silicified wood etc. all good indicators. The geologist dated the gravel bed at roughly 1 million years, with the silicified wood in the gravels dating back 280 million years.
- ARS Geology Consulting and Mineralogical Services confirmed the presence of accessory gold particles in the diamondiferous gravels between Christiana and Warrenton in 2018.

#### **Hydrology:**

The hydrology of the proposed mining footprint is representative of the regional hydrology described for the study area earlier in this report. The Vaal River

forms the north-western boundary of the proposed mining area. Further to this, the earmarked footprint harbors some drainage lines with associated floodplains and potential wetlands of importance.

According to the SANBI National Wetlands and FEPA information a few wetlands do occur within the study area as shown in the figure below. The wetlands mainly fall within one of the following categories:

- ◆ Floodplain Wetland: The mostly flat or gently sloping wetland area adjacent to and formed by a lowland or upland floodplain river, and subject to periodic inundation by overtopping of the channel bank (SANBI, 2009).
- ◆ Valley-Floor Wetland: Longitudinal wetland that runs along a valley floor. This type of wetland is associated with valley side-slopes within  $\pm 500$  m of the aquatic ecosystem. (SANBI, 2013).
- ◆ Plains Wetland: Plains are differentiated from valley floors by the absence of surrounding side-slopes. Only very flat areas with a gradient of less than 1:100 are considered to be plains. (SANBI, 2013).
- ◆ Bench Wetland: A relatively discrete area of mostly level or nearly level high round, including hilltop, saddles and shelves. Benches are significantly less extensive than plains. (SANBI, 2013).

#### **Biodiversity Conservation Areas:**

When the proposed mining footprint is layered over the Mining and Biodiversity Map the study area falls outside any identified biodiversity sensitive area and therefore does not require any additional action.

#### **Vegetation:**

- The vegetation cover of the proposed mining footprint is representative of the regional groundcover described for the study area earlier in this report. Undisturbed/natural areas have vegetation representative of the Kimberley Thornveld, and the Highveld Alluvial Vegetation type.
- As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the Free State Province Biodiversity Management Plan

(2015) regards the site as being of Ecological Support Area (ESA) 1 and 2 as well as Degraded and Other categories and do not contain Critical Biodiversity Area (CBA) which would be of high conservation value (Appendix A: Map 2). Despite this, natural areas do still contain some elements of conservation value such as a range of protected succulent and geophytic species and large and old specimens of the protected *Vachellia erioloba* (Camel Thorn).

### **Cultural and Heritage Environment:**

- According to the Heritage Desktop Assessment conducted by Jaco van der Walt (HCAC) (Refer to Appendix I1) The scope of work comprises a heritage desktop report for a large area comprising approximately 3 955.70 ha. Due to the geographical size of the current prospecting right and the fact that the relatively small impact areas of the proposed mining right have not been confirmed as yet, it was deemed not feasible to conduct fieldwork at this point. Some heritage surveys (Rossouw 2006; Dreyer 2008; Tomose 2016; Van Vollenhoven 2018) were conducted in the greater area and this desktop study is informed by available data for the area. Based on these studies, resources such as archaeological resources, historical finds, cultural landscapes, burials and cemeteries can be expected in the study area. According to the Palaeontological Impact Assessment (Appendix ....) based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the loose sands of the Quaternary.
- However, should artefacts archaeological items be observed during the mining activities, then all activity should cease immediately, the area marked off activity and a specialists consulted prior to any further activity. This also includes if any graves are observed on site during activity progress then all activity should have ceased and the area demarcated as a no-go zone.

### **Socio-Economic Environment:**

- The SLP notes that the Applicant proposes to have approximately 90 employees (30 employees per site) who will support approximately 288 dependents. Due to the fact that most of the employees will reside within Christiana, it is fair to presume that the majority of monthly earned salaries will be spent in the local area. Indirectly, through the payment for

services and suppliers the mine also supports employment of the procurement partners.

### **Existing Infrastructure:**

- The infrastructure within the mining footprint include, but isn't limited to, the following:
  - Fencing;
  - Housing and supporting structures;
  - Pivots;
  - Power lines.
  - Roads (public as well as private); and
  - Water abstraction and storage infrastructure.
- The proposed mining method is such that it can be moved away from build structures and existing infrastructure, thereby rendering the impact in this regard insignificant.
- As mentioned earlier, approximately  $\pm 34\%$  of the mining right footprint remains to be prospected and/or mined by the Applicant when the already developed areas are excluded from the application footprint.
- Should the Applicant implement the mitigation measures proposed in the EMPr the existing infrastructure in the footprint area should be protected against mining related impacts of the proposed activity.

### **Land Use:**

- The area earmarked for the proposed mining activity extends over eight (8) properties as listed earlier, within the magisterial district of Lejweleputswa, situated on the south-eastern bank of the Vaal River. The primary land use of the earmarked properties is agriculture including livestock- and/or game farming, crop production (centre-pivot irrigation), orchards, and dryland farming. The land use of some of the properties was also extended to include diamond mining.
- As mentioned earlier, the Applicant entered into a surface use agreement with the property owners when the prospecting right (FS30/5/1/1/2/449PR) was issued that bar mining in the cultivated areas (pivots and/or orchards) of the earmarked properties. As shown in the figure below, large portions of the earmarked properties were already developed for agricultural use. When these areas (developed agricultural areas) are excluded from the allowable mining footprint (in accordance

with the surface use agreement) approximately  $\pm 34\%$  of the mining right footprint remains to be prospected and/or mined by the Applicant should a mining right be issued.

## ii) Finale Site Map

Provide a map at an appropriate scale, which superimposes the proposed overall activity and its associated structure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers Attach as **Appendix**

See the map showing the site activities attached as Appendix C.

## iii) Summary of the positive and negative implications and risks of the proposed activity and identified alternatives

The potential positive impacts associated with the proposed project includes:

- Increased and continued work opportunities to local residents.
- Diversified income to landowners.
- Contribution of mine to local economic development.
- Return of the rehabilitated area to agricultural land use; and
- Potential use of the settling ponds for water storage or aquaculture purposes.

The following potential impacts were identified that may have a negative impact on the receiving environment:

- Increased traffic on public and private access roads;
- Visual intrusion as a result of site establishment;
- Loss of areas of agricultural importance;
- Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area;
- Potential impact on fauna within footprint area;
- Potential impact on areas/infrastructure of heritage or cultural concern;
- Potential impact on existing infrastructure within the footprint area;
- Dust nuisance caused by the disturbance of soil;
- Noise nuisance caused by earthmoving machinery and processing infrastructure;
- Potential infestation of the topsoil heaps with weeds or invader plant species;

- Loss/contamination of stockpiled topsoil;
- Potential contamination of construction area and surface runoff as a result of hydrocarbon spillages;
- Potential erosion of denuded areas;
- Safety risk posed by open excavations and settling ponds;
- Potential flooding of excavations;
- Degradation of access roads;
- Increased water use within the study area;
- Overloading of trucks impact road infrastructure; and
- Potential contamination of environment as a result of improper waste disposal.

The following table shows the potential negative impacts associated with the proposed Mining Right Application that were deemed to have a Low-Medium or higher significance/risk:

Table 27: List of potential impacts deemed to have a low-medium or higher significance/risk.

| ACTIVITY  | POTENTIAL IMPACT   | SIGNIFICANCE (BEFORE MITIGATION)   | SIGNIFICANCE (AFTER MITIGATION)   |
|---|--|--|---|
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Cumulative impacts</li> </ul> | <ul style="list-style-type: none"> <li>◆ Increased traffic on public and private access roads.</li> <li>◆ Visual intrusion as a result of site establishment.</li> <li>◆ Loss of areas of agricultural importance.</li> <li>◆ Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area</li> <li>◆ Potential impact on fauna within footprint area</li> <li>◆ Potential impact on areas/infrastructure of heritage or cultural concern</li> <li>◆ Potential impact on existing infrastructure within the footprint area.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ High SL1, Medium – High SL2 Medium TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ High SL1, Low – Medium SL2 Medium TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden of the mining area</li> </ul>       | <ul style="list-style-type: none"> <li>◆ Dust nuisance caused by the disturbance of soil.</li> <li>◆ Dust nuisance due to the movement of</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1,</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> </ul>   |

| ACTIVITY   | POTENTIAL IMPACT  | SIGNIFICANCE (BEFORE MITIGATION)  | SIGNIFICANCE (AFTER MITIGATION)   |
|--|---|---|---|
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul>  | <p>earthmoving equipment.</p> <ul style="list-style-type: none"> <li>◆ Dust nuisance generated at the processing area.</li> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities</li> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities</li> </ul> | <p>SL2, TD1, TD2)</p> <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low (SL1, SL2, TD1, TD2)</li> </ul>           |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden of the mining area</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Noise nuisance caused by earthmoving machinery.</li> <li>◆ Noise nuisance stemming from the processing activities.</li> <li>◆ Noise nuisance caused by machinery during the decommissioning phase.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul> | <ul style="list-style-type: none"> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Low-Medium (SL1, SL2, TD1, TD2)</li> <li>◆ Medium Medium (SL1, SL2, TD1, TD2)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Processing, stockpiling and transport of material</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Degradation of the access roads.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Medium - High (SL1, SL2, TD1, TD2)</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Overloading of trucks impact road infrastructure</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Low - Medium (SL1, SL2, TD1, TD2)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Increased traffic along the public and private access roads.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Medium - High (SL1, SL2, TD1, TD2)</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Medium (SL1, SL2, TD1, TD2)</li> </ul>   |



**I) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR;**

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPR as well as for inclusion as conditions of authorization.

Table 28: Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR

| MANAGEMENT OBJECTIVES                                      | ROLE  | MANAGEMENT ACTIONS   | MANAGEMENT OUTCOMES   |
|--|---|--|---|
| <p><b>TOPOGRAPHY</b></p> <p>Landscaping of Mining Area</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Ensure that the excavated area serve as a final depositing area for the placement of overburden.</li> <li>◆ Dump rocks and coarse material removed from the excavation into the excavation.</li> <li>◆ Remove coarse natural material and dump it into the excavations.</li> <li>◆ Remove stockpiles during the decommissioning phase, rip the areas and return the topsoil to its original depth to provide a growth medium.</li> <li>◆ Do not deposit any waste in the excavations.</li> <li>◆ Once overburden, rocks and coarse natural materials have been added to the excavation and it was profiled with acceptable contours and erosion control measures, return the topsoil previously stored to its original depth over the area.</li> <li>◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.</li> <li>◆ Fertilized the areas if necessary to allow vegetation to establish rapidly. Seed the site with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora, should</li> </ul> | <ul style="list-style-type: none"> <li>◆ Effectively restoring the mining area to allow for the proposed agricultural end-use.</li> </ul> |



| MANAGEMENT OBJECTIVES   | ROLE  | MANAGEMENT ACTIONS   | MANAGEMENT OUTCOMES   |
|---|---|--|---|
|   |   | <p>natural vegetation not re-establish within 6 months from closure of the site.</p> <ul style="list-style-type: none"> <li>◆ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.</li> <li>◆ On completion of operations, deal with all structures or objects in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).</li> <li>◆ On completion of mining operations, scarify the surface of all plant-, and/or stockpiling areas, if compacted due to hauling and dumping operations, to a depth of at least 200 mm and grade it to an even surface condition. Where applicable/possible return the topsoil to its original depth over the area.</li> </ul> |   |
| <p><b>VISUAL CHARACTERISTICS</b></p> <p>Visual Mitigation</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Ensure that the site have a neat appearance and is kept in good condition at all times.</li> <li>◆ Store mining equipment neatly in a dedicated area with a sealed drip tray underneath when not in use.</li> <li>◆ Limit vegetation removal, and only strip topsoil immediately prior to the mining/use of a specific area.</li> <li>◆ Contain the excavation within the approved footprint of the mining right.</li> <li>◆ Manage all riparian areas and watercourses (outside the mining footprint) along with the recommended 100 m buffer area as no-go areas.</li> <li>◆ Rehabilitate and landscape the site upon closure to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Minimise the impact of the mining operations on the visual characteristics of the receiving environment during the operational phase, and minimise the residual impact after closure.</li> </ul> |
| <p><b>AIR QUALITY AND NOISE</b></p>                           | <p>Site Manager to ensure compliance with the guidelines as stipulated in the</p>   | <ul style="list-style-type: none"> <li>◆ Control the liberation of dust into the surrounding environment by the use of; inter alia, water spraying and/or other dust-allaying</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Dust prevention measures are applied to minimise the generation</li> </ul>   |



| MANAGEMENT OBJECTIVES  | ROLE  | MANAGEMENT ACTIONS   | MANAGEMENT OUTCOMES   |
|--|---|--|---|
| <p><b>AMBIANCE</b></p> <p>Dust Mitigation</p>                      | <p>EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> <p>Occupational Hygienist to report on the noise levels of the quarry.</p> | <p>agents.</p> <ul style="list-style-type: none"> <li>◆ Ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> <li>◆ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust.</li> <li>◆ Minimise areas devoid of vegetation, and only remove vegetation immediately prior to mining.</li> <li>◆ Implement a dust management plan and conduct monthly fall-out dust monitoring on site to accurately determine the site specific dust levels.</li> <li>◆ Flatten and cover loads to prevent spillage of material during transportation on public roads.</li> <li>◆ Consider weather conditions upon commencement of daily operations. Limit operations during very windy periods.</li> <li>◆ Ensure dust-generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012).</li> <li>◆ Implement best practice measures during the stripping of topsoil, loading, and transporting of the mineral from the site to minimize potential dust impacts.</li> </ul> | <p>of dust.</p>   |
| <p><b>AIR QUALITY AND NOISE AMBIANCE</b></p> <p>Noise Handling</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Ensure that employee and visitors to the site conduct themselves in an acceptable manner while on site.</li> <li>◆ Do not permit loud music at the mining area.</li> <li>◆ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996.</li> <li>◆ Implement best practice measures to minimise potential noise impacts.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.</li> </ul> |
| <p><b>GEOLOGY AND SOIL</b></p>                                     | <p>Site Manager to ensure compliance with the guidelines as stipulated in the</p>   | <ul style="list-style-type: none"> <li>◆ Strip and stockpile the upper 300 mm of the soil before mining.</li> <li>◆ Carefully manage and conserve the topsoil throughout the</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Adequate fertile topsoil is available to rehabilitate the mining area.</li> </ul>                                      |

| MANAGEMENT OBJECTIVES   | ROLE   | MANAGEMENT ACTIONS  | MANAGEMENT OUTCOMES |
|-------------------------|--|---|---------------------|
| <p>Topsoil Handling</p> | <p>EMPR.<br/><br/>Compliance to be monitored by the Environmental Control Officer.</p> | <p>stockpiling and rehabilitation process.</p> <ul style="list-style-type: none"> <li>◆ Ensure topsoil stripping, stockpiling and re-spreading is done in a systematic way. Plan mining in such a way that topsoil is stockpiled for the minimum possible time.</li> <li>◆ Place the topsoil heaps on a levelled area within the mining footprint area. Do not stockpile topsoil in undisturbed areas.</li> <li>◆ Protect topsoil stockpiles against losses by water- and wind erosion. Position stockpiles so as not to be vulnerable to erosion by wind and water. Establish plants (weeds or a cover crop) on the stockpiles to prevent erosion.</li> <li>◆ Ensure that topsoil heaps do not exceed 2 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.</li> <li>◆ Keep temporary topsoil stockpiles free of invasive plant species.</li> <li>◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.</li> <li>◆ Vegetate topsoil heaps to be stored longer than 6 months with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season.</li> <li>◆ Divert storm- and runoff water around the stockpile area to prevent erosion.</li> <li>◆ Spread the topsoil evenly, to a depth of 300 m, over the rehabilitated area upon closure of the site.</li> <li>◆ Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that</li> </ul> |                     |



| MANAGEMENT OBJECTIVES  | ROLE  | MANAGEMENT ACTIONS   | MANAGEMENT OUTCOMES  |
|--|---|--|--|
|  |   | <p>erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season.</p> <ul style="list-style-type: none"> <li>◆ Plant a cover crop immediately after spreading topsoil to stabilise the soil and protect it from erosion. Fertilise the cover crop for optimum production. Rehabilitation extends until the first cover crop is well established.</li> <li>◆ Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.</li> </ul>  |  |
| <p><b>HYDROLOGY AND GEOHYDROLOGY</b></p> <p>Erosion Control and Storm Water Management</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Prevent activities or movement of any mining vehicles within the close proximity to the Vaal River or within the floodplain and riparian zone, lateral drainage lines and small depressions or pans occurring in the mining area.</li> <li>◆ Establish a Rehabilitation Plan addressing phase rehabilitation methods where areas that are no longer mined or utilised, are systematically rehabilitated. Rectify any erosion problems within the mining area as a result of the mining activities within 24 hours and monitor the area thereafter to prevent re-occurrence.</li> <li>◆ The topsoil and seedbank must be managed in an appropriate manner for it to be able to be restored to its previous state as well as to bind the soil and limit erosion potential.</li> <li>◆ Regularly monitor roads and other disturbed areas within the project area for erosion problems and once remediated ensure follow-up monitoring is implemented.</li> <li>◆ Use silt/sediment traps/barriers where there is a danger of topsoil or material stockpiles eroding and entering drainage lines and other sensitive areas. Regularly maintain and clear these sediment/silt barriers to ensure effective drainage of the area.</li> <li>◆ When deemed necessary, construct gabions and/or other stabilisation features to prevent erosion.</li> <li>◆ Limit erosion by ensuring that mine vehicles and human movement is limited to project-specific dedicated access ways.</li> <li>◆ Divert storm water around the topsoil heaps and mining areas to prevent erosion.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Impact to the environment caused by storm water discharge is avoided and erosion is managed.</li> </ul> |



| MANAGEMENT OBJECTIVES   | ROLE  | MANAGEMENT ACTIONS   | MANAGEMENT OUTCOMES  |
|---|---|--|--|
|   |   | <ul style="list-style-type: none"> <li>◆ Protect stockpiles from erosion, stored it on flat areas, and surround it by appropriate berms where possible.</li> <li>◆ Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS.</li> </ul>  |  |
| <p><b>HYDROLOGY AND GEOHYDROLOGY</b></p> <p>Conservation of riparian vegetation, rivers, drainage lines and watercourses.</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Regard Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area (inside the mining footprint) as no-go areas.</li> <li>◆ Keep vegetation clearing within the development footprint to a minimum and implement phased development.</li> <li>◆ Place all material stockpiles outside drainage lines and watercourse areas.</li> <li>◆ Implement the erosion control mitigation measures described in this document.</li> <li>◆ Place berms and catchment paddocks around all topsoil- and waste (if any) stockpiles at their toe to contain runoff from the facilities.</li> <li>◆ Only disturb the vegetation within the identified footprint.</li> <li>◆ Do not store any equipment within the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area (inside the mining footprint) remains unaffected by mining.</li> </ul> |
| <p><b>HYDROLOGY AND GEOHYDROLOGY</b></p> <p>Management of Surface Water Quality.</p>  | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Implement appropriate measures to ensure strict use and management of all hazardous materials used on site.</li> <li>◆ Operate using best practises by storing hazardous substances in an adequately sized bunded area, with appropriate safety equipment at the off-site workshop.</li> <li>◆ Consider any water that collects within a bunded area as hazardous and dispose as such.</li> <li>◆ Ensure bunded areas are water tight and frequently inspect for leaks.</li> <li>◆ Rectify leaks to the bunded areas within 24 hours.</li> <li>◆ Use drip trays to collect leaks from vehicles and machinery parked for more than an hour.</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Drainage areas protected from any impact as a result of mining.</li> </ul>  |



| MANAGEMENT OBJECTIVES  | ROLE   | MANAGEMENT ACTIONS  | MANAGEMENT OUTCOMES  |
|--|--|---|--|
|  |  | <ul style="list-style-type: none"> <li>◆ Ensure all refuelling takes place at the off-site workshop or refuelling area. Refuel machinery that cannot move of site over drip trays.</li> <li>◆ Place spill kits on site which are operated by trained staff members for the ad hoc remediation of minor chemical and hydrocarbon spillages.</li> <li>◆ Do not refuel any vehicles within drainage lines, streams/riparian vegetation.</li> <li>◆ Implement appropriate measures to ensure strict management of potential sources of pollutants (e.g. litter, hydrocarbons from vehicles and machinery, cement during construction etc.).</li> <li>◆ Handle a spill at the source of the leak and prevent it from transpiring to the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area.</li> <li>◆ Conduct routine maintenance on all vehicles as per maintenance schedule and keep records.</li> <li>◆ Store waste in clearly marked containers in a demarcated area.</li> <li>◆ Remove all waste material at the end of every work day to the designated waste facilities at the main camp/suitable waste disposal facility.</li> <li>◆ Treat sewage spills as hazardous waste and handle as such.</li> <li>◆</li> </ul> |  |
| <p><b>MINING, BIODIVERSITY CONSERVATION AREAS AND VEGETATION</b></p> <p>Management of Vegetation Removal and Conservation.</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Botanist to assist with the relocation of plants of importance (when needed).</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Clearly demarcate the mining boundaries and contain all operations to the approved mining area.</li> <li>◆ Adhere to the layout of SLA2, as proposed in this document.</li> <li>◆ Arrange a pre-commencement walk-through of the final mining footprint by a suitably qualified botanist, for species of conservation concern that would be affected.</li> <li>◆ Keep permits for the removal of protected plant species (if required) on-site and in the possession of the flora search and rescue team at all times.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Vegetation clearing is restricted to the authorised development footprint of the mine.</li> </ul> |



| MANAGEMENT OBJECTIVES  | ROLE  | MANAGEMENT ACTIONS   | MANAGEMENT OUTCOMES   |
|--|---|--|---|
|  |   | <ul style="list-style-type: none"> <li>◆ Conduct a pre-commencement environmental induction for all staff on site to ensure that basic environmental principles are adhered to. This includes awareness of no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimising wildlife interactions, remaining within demarcated construction areas, etc.</li> <li>◆ Ensure that the on-site ECO provide supervision and oversee vegetation clearing activities and other activities which may cause damage to the environment, especially at the initiation of each new strip, when the majority of vegetation clearing is taking place.</li> <li>◆ Limit blanket clearing of vegetation to the proposed mining footprint (SLA2) and associated infrastructure. Prevent clearing outside of the minimum required footprint.</li> <li>◆ Strip and stockpile topsoil separately during site preparation and replace over disturbed areas on completion.</li> <li>◆ Keep all vehicles on demarcated roads and prevent unnecessary driving in the veld outside these areas.</li> <li>◆ Do not translocate plants or otherwise uprooted or disturbed it for rehabilitation or other purposes without express permission from the ECO and without the relevant permits.</li> <li>◆ Do not allow fires on-site.</li> <li>◆ After the operation, rehabilitate an acceptable vegetation layer according to rehabilitation recommendations as provided within a site-specific Rehabilitation Plan compiled by a suitably qualified botanist.</li> </ul> |   |
| <p><b>MINING, BIODIVERSITY CONSERVATION AREAS AND VEGETATION</b></p> <p>Management of Invasive Plant Species</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Implement an invasive plant species management plan at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA, 2004. Do weed/alien clearing on an ongoing basis throughout the life of the mining activities.</li> <li>◆ Keep all stockpiles (topsoil &amp; overburden) free of invasive plant species.</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Mining area is kept free of invasive plant species.</li> </ul> |





| MANAGEMENT OBJECTIVES  | ROLE  | MANAGEMENT ACTIONS   | MANAGEMENT OUTCOMES  |
|--|---|--|--|
|  |   | <ul style="list-style-type: none"> <li>◆ Regularly monitor the site for alien plants.</li> <li>◆ Control declared invader or exotic species on the rehabilitated areas.</li> <li>◆ Keep disturbance to a minimum when clearing.</li> <li>◆ No planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose may be allowed.</li> </ul>   |  |
| <p><b>MINING, BIODIVERSITY CONSERVATION AREAS AND VEGETATION</b></p> <p>Cumulative Impacts</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Keep the activity footprints of various proposed mining locations and other development proposals in the area to a minimum and encourage a stable vegetation to return during the post-operational phase.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Mining area does not impact on the broad-scale ecological processes.</li> </ul> |
| <p><b>FAUNA</b></p> <p>Protection of Fauna</p>   | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Ensure no fauna is caught, killed, harmed, sold or played with.</li> <li>◆ Arrange the ECO or other suitably qualified person to remove any fauna directly threatened by the operational activities to a safe location.</li> <li>◆ Conduct environmental induction with all personnel regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Instruct workers to report any animals that may be trapped in the working area.</li> <li>◆ Ensure no snares are set or nests raided for eggs or young.</li> <li>◆ Ensure all vehicles adhere to a low speed limit (40 km/h) to avoid collisions with susceptible species such as snakes and tortoises.</li> <li>◆ When possible, prevent activity at the site between sunset and sunrise, except for security personnel guarding the operation (if needed).</li> <li>◆ Do not handle any dangerous fauna that are encountered. Contact a suitable qualified person to remove the animals to safety.</li> <li>◆ Prevent litter, food or other foreign material being thrown or left</li> </ul> | <ul style="list-style-type: none"> <li>◆ Disturbance to fauna is minimised.</li> </ul>                                   |



| MANAGEMENT OBJECTIVES  | ROLE  | MANAGEMENT ACTIONS  | MANAGEMENT OUTCOMES   |
|--|---|---|---|
|  |   | around the site.  |   |
| <p><b>CULTURAL AND HERITAGE ENVIRONMENT</b></p> <p>Archaeological, Heritage and Palaeontological Aspects</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Archaeologist/Palaeontologist to comment should any features of importance be unearthed.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Confine all mining to the development footprint area.</li> <li>◆ Implement the following change find procedure when discoveries are made on site:                             <ul style="list-style-type: none"> <li>▪ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</li> <li>▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.</li> <li>▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.</li> <li>▪ Work may only continue once the go-ahead was issued by SAHRA.</li> </ul> </li> <li>◆ Implement the Fossil Chance Find Procedure, proposed in this document, should fossils be uncovered.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Impact to cultural/heritage resources is avoided or at least minimised.</li> </ul> |
| <p><b>SOCIO-ECONOMIC ENVIRONEMNT / LAND USE</b></p> <p>Loss of Agricultural Land for Duration of Mining.</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>   | <ul style="list-style-type: none"> <li>◆ If needed, sign mined-out/rehabilitated areas back to agricultural use once the cover crop stabilised.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Mining has the least possible impact on the operation of the property.</li> </ul>  |
| <p><b>SOCIO-ECONOMIC</b></p>   | <p>Site Manager to ensure compliance with the guidelines as stipulated in the</p>   | <ul style="list-style-type: none"> <li>◆ Ensure any new employees, or sub-contractors are vetted prior to inception of their contract.</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Mining activity does not have an adverse effect on the safety and</li> </ul>       |

| MANAGEMENT OBJECTIVES   | ROLE  | MANAGEMENT ACTIONS  | MANAGEMENT OUTCOMES   |
|---|---|---|---|
| <p><b>ENVIRONEMNT / LAND USE</b></p> <p>Mining Area Negatively Affecting Safety and Security of Area.</p> | <p>EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>  | <ul style="list-style-type: none"> <li>◆ Prohibit entry of unauthorised personnel into mining area.</li> <li>◆ Educate mining employees, including truck drivers, to report suspicious looking person/s and/or matters within the surrounding area.</li> <li>◆ Maintain communication between the mine and surrounding landowners for the duration of the site establishment-, operational- and decommissioning phases.</li> </ul>  | <p>security of the area.</p>  |
| <p><b>EXISTING INFRASTRUCTURE</b></p> <p>Protection of Existing Infrastructure.</p>                       | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Contain all mining activities inside the approved mining boundary.</li> <li>◆ Repair any structural damage that directly results from the mining at the mine at the cost of the MR Holder.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Mining does not adversely affect any of the existing infrastructure.</li> </ul>                    |
| <p><b>GENERAL</b></p> <p>Waste Management</p>   | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Ensure regular vehicle maintenance, repairs and services only take place at the off-site workshop and service area. Ensure drip trays are present if emergency repairs are needed on equipment not able to move to the workshop. Dispose all waste products in a closed container/bin to be removed from the emergency service area (same day) to the workshop in order to ensure proper disposal.</li> <li>◆ Ensure that employees make use of the formal ablution facilities at the site offices, alternatively provide them with a chemical toilet that is serviced at least once a week by an accredited liquid waste handling contractor.</li> <li>◆ Ensure that the use of any temporary, chemical toilet facilities does not cause pollution to water sources or pose a health hazard. In addition, prevent any form of secondary pollution from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately.</li> <li>◆ If a diesel bowser is used on site, equip it with a drip tray at all times. Ensure that drip trays are used during each and every refuelling</li> </ul> | <ul style="list-style-type: none"> <li>◆ Wastes are appropriately handled and safely disposed of at recognised waste facilities.</li> </ul> |



| MANAGEMENT OBJECTIVES  | ROLE   | MANAGEMENT ACTIONS  | MANAGEMENT OUTCOMES   |
|--|--|---|---|
|  |  | <p>event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.</p> <ul style="list-style-type: none"> <li>◆ Clean drip trays after use. Do not use dirty drip trays.</li> <li>◆ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.</li> <li>◆ Should spillage occur, such as oil or diesel leaking from a burst pipe, collect the contaminated soil, within the first hour of occurrence, in a suitable receptacle and remove it from the site, either for resale or for appropriate disposal at a recognized facility. File proof.</li> <li>◆ Place suitable covered receptacles at convenient places for disposal of waste.</li> <li>◆ Store non-biodegradable refuse in a container with a closable lid at a collecting point to be collected at least once a month and disposed of at a recognised landfill site. Do not allow the dumping of refuse on or in the vicinity of the mine area.</li> <li>◆ Handle biodegradable refuse as indicated above.</li> <li>◆ Prevent the burning or burying of waste on site.</li> <li>◆ Encourage re-use and/or recycling of waste products on site.</li> <li>◆ Report any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities to the DWS and other relevant authorities.</li> </ul> |   |
| <p><b>GENERAL</b></p> <p>Management of Health and Safety Risks</p> | <p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Health and safety representative to manage H&amp;S aspects at the mine.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <ul style="list-style-type: none"> <li>◆ Ensure adequate ablution facilities and water for human consumption are daily available on site.</li> <li>◆ Ensure that workers have access to the correct PPE as required by law.</li> <li>◆ Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Employees work in a healthy and safe environment.</li> </ul> |



### m) Final proposed alternatives.

(provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives, which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment)

During the EIA phase, apart from the no-go alternative, two site layout alternatives, and two technology / design alternatives were considered upon review of the site specific information, comments received from the public, and the results of the specialist studies. Below is a summary of the final proposed alternatives:

1. **Site Layout Alternative 1** – Identified during the planning phase by the Applicant and project team, as the preferred and only viable site layout alternative. During the EIA process, the project team heeded the suggestions, and investigate the possible implementation thereof.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible (Appendix A: Map 4 of appendix H):

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.

- All of the lateral drainage lines which flow into the Vaal River including a 100m buffer.
- The pan systems occurring on the site, including small and degraded pans including a 100m buffer.
- Portions of Camel Thorn (*Vachellia erioloba*) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.

2. **Site Layout Alternative 2** - was therefore included as per the above study in order to excluded the sensitive areas and found to be the preferred as the proposed alternative will not necessitate the loss of sensitive areas.
3. **Project Alternatives** – Entails the winning of alluvial diamonds and gold from minor areas ( $\pm 2$  ha) to be operated within the footprint of the major

footprint area (3 955.7022 ha). The current project alternative proposes the simultaneous operation of three (3) minor areas through opencast and strip-mining methods, with the concentrate, recovered at the processing plant, transported to an off-site recovery plant. The operation of all minor areas will be in accordance with the conditions of the surface use agreement to be signed by the Applicant and landowner prior to the commencement of mining. PA1 entails the disturbance of  $\pm 0.15\%$  of the proposed footprint area at any given time as concurrent rehabilitation is proposed. After supplementary information was obtained no additional project alternatives were deemed necessary during the EIA process.

4. **Technology Alternatives** – As with the project alternatives, technology and design alternatives was considered during the EIA process. The following technology/design principles was considered by the Applicant and project team:

- The use of permanent infrastructure as opposed to temporary infrastructure;
- The processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant.

The use of permanent infrastructure as opposed to temporary infrastructure as well as processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant was assessed for the proposed mining but found not environmentally and practically suitable. Therefore, the use of temporary infrastructure as well as the processing of the concentrate at a remote recovery plant was deemed the only viable Site Layout alternative as it will have a much lower impact.

5. **No-go Alternative** – Entails no change to the status quo and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the area will remain that of agriculture, crop production, and game/livestock farming with the diamond and gold resources unmined. Amongst others, the socio-economic impact of mining on current, and future land uses of the study area was considered as part of the EIA process, and discussed in this document.

**n) Aspects for inclusion as conditions of Authorization.**

Any aspects which have not formed part of the EMPR that must be made conditions of the Environmental Authorization

The management objectives listed in this report under *Part A(1)(L) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* above should be considered for inclusion in the environmental authorisation.

Additional to those conditions the following must be considered as conditions of the Environmental Authorisation:

- ◆ The MR Holder must obtain a Water Use Authorization in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998) for water uses as defined in Section 21 of the act.

**o) Description of any assumptions, uncertainties and gaps in knowledge.**

(Which relate to the assessment and mitigation measures proposed)

The assumptions made in this document which relate to the assessment and mitigation measures proposed, stem from site-specific information gathered from the MR Holder, as well as site inspections, and background information. No uncertainty regarding the proposed project or the receiving environment could be identified at this stage.

**p) Reasoned opinion as to whether the proposed activity should or should not be authorized**

**i) Reasons why the activity should be authorized or not.**

The prospecting results (to date) have shown that the prospecting area has a high potential to yield diamondiferous gravel. Prospecting has however also shown that the presence of diamondiferous gravel is highly variable and cannot be projected based on the amount of prospecting done to date. The Applicant therefore desires the proposed mining right to incorporate the entire prospecting right area as this will allow additional time for prospecting and mining of the resource within the remaining footprint. The primary goal of the proposed mining operation will be the winning of alluvial diamonds. However, since the presence of gold fines, within the diamondiferous gravel, was established the Applicant included gold as a commodity to the mining right



application. Should the recovery plant procure gold fines (placer deposits) while sorting the diamond concentrated, the Applicant will sell the mineral in accordance with relevant legislation. No additional activities/process will be required to win/extract gold from the proposed mining right area. Gold finds will be exclusively reliant on the presence of diamondiferous gravel, is expected to be capricious, and will therefore be treated as a derivative with the presence/absence thereof not affecting the feasibility of the proposed project.

## ii) Conditions that must be included in the authorization

### (1) Specific conditions to be included into the compilation and approval of EMPR

The management objectives listed in this report under *Part A(1)(l) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* must be included into the compilation and approval of the EMPR.

### (2) Rehabilitation requirements

The rehabilitation- and closure objectives proposed in *Part B(d)(i) Determination of Closure Objectives* and the Closure Plan attached as Appendix M, to this report, must be included in the authorisation.

Once the entire mining area was rehabilitated the MR Holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *“An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report”*. The Closure Application will also be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

## q) Period for which the Environmental Authorization is required.

The MR Holder requested that the Environmental Authorisation be valid for the duration of the mining right (at least until 2052).

**r) Undertaking**

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPR and is applicable to both the Basic assessment report and the Environmental Management Programme report.

The undertaking required to meet the requirements of this section is provided at the end of the EMPR and is applicable to both the Environmental Impact Assessment Report and the Environmental Management Programme report.

**s) Financial Provision**

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

**i) Explain how the aforesaid amount was derived.**

The amount required to manage and rehabilitate the affected environment was estimated to be R 1348781.65. Please refer to Part B(1)(f)(i)(1)(e) *Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline* for and explanation as to how this amount was arrived at.

**ii) Confirm that this amount can be provided for from operating expenditure.**

(Confirm that the amount is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

Invest in Property 84 (Pty) Ltd is responsible for the financial and technical aspects of the mining project. The operating expenditure is provided for as such in the Financial and Technical Ability attached as Appendix N to this report.

**t) Deviations from the approved scoping report and plan of study.**

**i) Deviations from the methodology used in determining the significance of potential environmental impacts and risks.**

(Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made, and a brief description of the extent of the deviation).

No deviation from the methodology used in determining the significance of potential environmental impacts and risks were deemed necessary.

The methodology described in the Scoping Report was also used in the Environmental Impact Assessment Report.

**ii) Motivation for the deviation.**

Not applicable.

**u) Other Information required by the competent Authority**

**i) Compliance with the provisions of sections 24 (4) (a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998), the EIA report must include the:**

**(1) Impact on the socio-economic conditions of any directly affected person.**

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as Appendix 219.1 and confirm that the applicable mitigation is reflected in 2.5.3, 2.11.6 and 2.12 herein).

The following potential impacts were identified that may affect socio-economic conditions of directly affected persons:

**Increased traffic on public and private access roads:**

- Mining related equipment must overnight at a designated parking area within the processing area, to reduce the number of vehicles/equipment driving on the public and private access roads.
- The speed of all mining equipment/vehicles must be restrictions to 40 km/h on internal farm roads and 60 km/h on the public roads.
- The mitigation measures associated with this impact must be expanded upon as part of the proposed traffic assessment of the EIA process.

**Visual Mitigation:**

- The site must have a neat appearance and be kept in good condition at all times.
- Mining equipment must be stored neatly in dedicated areas when not in use;
- The screening of mining infrastructure must be considered;
- The right holder must limit vegetation removal, and stripping of topsoil may only be done immediately prior to the mining/use of a specific area;

- The stockpile areas must be managed to prevent excessive storage periods of overburden material;
- Upon decommissioning of a minor area, the site must be rehabilitated and topsoiled to reduce the visual impact of the mining activities and return the area to its prior status.

**Mitigation of negative impacts to existing infrastructure:**

- Mining may not endanger/damage the existing infrastructure on the farms within the mining boundary without prior written permission obtained from the land/infrastructure owner. Such permission must be filed for auditing purposes.
- Damage caused to non-mining related infrastructure due to mining related activities must be repaired/replaced by the Applicant on his/her own cost.

**Dust emissions associated with the project:**

- The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents.
- The roads and stockpile areas must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCB's (e.g. DAS products) if dust is generated above acceptable limits.
- The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- Speed on the gravel roads must be limited to 40 km/h to prevent the generation of excessive dust.
- Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to mining.
- Topsoil stockpiles must be covered alternatively planted with indigenous grass species to minimize exposed surface areas, and reduce windblown dust from the site. The vegetation will further assist in capturing wind born dust and minimizing the spread of dust from the site.
- The Applicant must implement a dust management plan and conduct fall-out dust monitoring (if deemed necessary) on site to accurately determine the site specific dust levels.

- Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during windy periods will reduce airborne dust and resulting impacts.
- Dust generated from the stripping of topsoil and mining operations shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).
- Best practice measures shall be implemented during the stripping of topsoil, processing and stockpiling activities in order to minimize potential dust impacts.

**Noise mitigation measures:**

- All mining related vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).
- Best practice measures shall be implemented in order to minimize potential noise impacts.
- The Applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- Employees will not be allowed to reside on site.
- No loud music may be allowed on site.
- A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA, 2004, SANS 10103:2008.

**Weeds and invader plants mitigation measures:**

- An invasive plant species management plan must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the mining activities.
- Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:

- The plants can be uprooted, felled or cut off and can be destroyed completely.
  - The plants can be treated chemically by a registered PCO through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.
- All stockpiles must be kept free of weeds.

**Management of access roads:**

- Storm water must be diverted around the access road to prevent erosion.
- Vehicular movement must be restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.
- Rutting and erosion of the access road caused as a result of the mining activities must be repaired by the mining right holder.

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

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 219.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

The specialists did not identify the presence of national estate as referred to in Section 3(2) of the NHRA, 1999 within the earmarked footprint of the mining area.

**v) Other matter required in terms of section 24(4)(a) and (b) of the Act.**

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives as contemplated in sub-regulation 22(2)(h), exist the EAP must attach such motivation as **Appendix C2**)

The site alternatives associated with the mining area, investigated during the impact assessment process, were done at the hand of information obtained during the site investigation, public participation process, specialist studies as well as desktop studies conducted of the study area. As discussed earlier the following alternatives were considered:

1. **Site Layout Alternative 1** – Identified during the planning phase by the Applicant and project team, as the preferred and only viable site layout alternative. During the EIA process, the project team heeded the suggestions, and investigate the possible implementation thereof.

As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible (Appendix A: Map 4 of appendix H):

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.

- All of the lateral drainage lines which flow into the Vaal River including a 100m buffer.
- The pan systems occurring on the site, including small and degraded pans including a 100m buffer.
- Portions of Camel Thorn (*Vachellia erioloba*) woodland that remain on the site. These are utilised as game areas and are unlikely to be affected by mining.

2. **Site Layout Alternative 2** - was therefore included as per the above study in order to excluded the sensitive areas and found to be the preferred as the proposed alternative will not necessitate the loss of sensitive areas.
3. **Project Alternatives** – Entails the winning of alluvial diamonds and gold from minor areas ( $\pm 2$  ha) to be operated within the footprint of the major footprint area (3 955.7022 ha). The current project alternative proposes the simultaneous operation of three (3) minor areas through opencast and strip-mining methods, with the concentrate, recovered at the processing plant, transported to an off-site recovery plant. The operation of all minor areas will be in accordance with the conditions of the surface use agreement to be signed by the Applicant and landowner prior to the commencement of mining. PA1 entails the disturbance of  $\pm 0.15\%$  of the proposed footprint area at any given time as concurrent rehabilitation is proposed. After supplementary information was obtained no additional project alternatives were deemed necessary during the EIA process.
4. **Technology Alternatives** – As with the project alternatives, technology and design alternatives was considered during the EIA process. The following technology/design principles was considered by the Applicant and project team:

- The use of permanent infrastructure as opposed to temporary infrastructure;
- The processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant.

The use of permanent infrastructure as opposed to temporary infrastructure as well as processing of the concentrate at a remote recovery plant opposed to the use of a locally established plant was assessed for the proposed mining but found not environmentally and practically suitable. Therefore, the use of temporary infrastructure as well as the processing of the concentrate at a remote recovery plant was deemed the only viable Site Layout alternative as it will have a much lower impact.

5. **No-go Alternative** – Entails no change to the status quo and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the area will remain that of agriculture, crop production, and game/livestock farming with the diamond and gold resources unmined. Amongst others, the socio-economic impact of mining on current, and future land uses of the study area was considered as part of the EIA process, and discussed in this document.



**PART B**

**INVEST IN PROPERTY 84 (PTY) LTD  
WHOLE FARM OF VAN ASWEGENS HOEK 493 AND WHOLE FARM  
OF GREYLINGSLYN 355, MAGISTERIAL DISTRICT OF BOSHOF  
FREE STATE PROVINCE**

**ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**



***DEPARTMENTAL REFERENCE NUMBER:***

***FS 30/5/1/2/2/10067 MR***

**FEBRUARY 2022**

## PART B

### ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

#### 1. Final environmental management programme.

##### a) Details of the EAP,

(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

The details and expertise of Mrs. Sonette of Greenmined Environmental (Pty) Ltd that acts as EAP on this project has been included in *Part A(1)(a) Details of Greenmined Environmental* as well as Appendix S as required.

##### b) Description of the Aspects of the Activity

(Confirm that the requirement to describe the aspects of the activity that are covered by the Final environmental management programme is already included in PART A, section (1)(h) herein as required)

The aspects of the activity that are covered by the Final environmental management programme has been described and included in *Part A(1)(h) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity.*

##### c) Composite Map

(Provide a map (**Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers)

As mentioned under *Part A(1)(k)(ii) Finale Site Map* the map was compiled and is attached as Appendix C.

##### d) Description of Impact management objectives including management statements

###### i) Determination of closure objectives.

(ensure that the closure objectives are informed by the type of environment described in 2.4 herein)

The closure objectives entail progressive rehabilitation of each strip as mining progress. The applicant proposes the following with regard to rehabilitation of the mined-out areas:

- The mining plan will be such that topsoil is stockpiled on an annual basis through rehabilitating the three 2ha mining blocks progressively as mining continues.
- To ensure minimum impact on drainage, through adequate mitigation these impacts can be minimised and provided adequate rehabilitation is undertaken no additional and other permanent modification to the functioning of these systems.
- After mining, any steep slopes at the edges of excavations will be reduced to a minimum and profiled to blend with the surrounding topography.

Final rehabilitation will entail the removal of all infrastructure and equipment from the site according to the closure objectives stipulated in the attached closure plan (Appendix U). Final landscaping, levelling and top dressing will be done on all areas not yet rehabilitated including the processing and stockpile areas. Control of weeds and invasive plant species is an important aspect after topsoil replacement and seeding has been done in an area. Site management will implement an alien invasive plant species management plan during a 24 months' aftercare period to address germination of problem plants in the area.

The Applicant will also comply with the minimum closure objectives as prescribed by DMR and detailed below:

- Final rehabilitation shall entail landscaping, levelling, top dressing, land preparation, seeding (if required), and weed / alien clearing of the last strip as well as those areas in the remaining area that require additional attention;
- All infrastructures, equipment, and other items used during the mining period will be removed from the site (section 44 of the MPRDA);
- General waste material of any description will be removed from the mining area and disposed of at a recognized landfill site. It will not be permitted to be buried or burned on the site;
- Weed / Alien clearing will be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) must be managed and controlled on site on an ongoing basis;
- Final rehabilitation shall be completed within a period specified by the Regional Manager;

- Upon final rehabilitation and closure the mining site will revert back to agricultural use.

The future land use of the proposed area will be agriculture. Upon replacement of the topsoil, the area around the excavation will be available for grazing purposes, and the planting of the cover crop (to protect the topsoil) will tie in with the proposed land use.

The MR Holder will comply with the minimum closure objectives as prescribed by DMRE and detailed below:

#### **Rehabilitation of the excavated area:**

- ◆ The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material removed from the excavation must be dumped into the excavation.
- ◆ No waste may be permitted to be deposited in the excavations.
- ◆ Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.
- ◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.
- ◆ The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within six months from closure of the site.
- ◆ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining

operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

**Rehabilitation of plant/processing area:**

- ◆ Coarse natural material used for the construction of ramps must be removed and dumped into the excavations.
- ◆ Stockpiles must be removed during the decommissioning phase, the area ripped and the topsoil returned to its original depth to provide a growth medium.
- ◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.
- ◆ On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002):
  - Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
  - The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- ◆ Photographs of the sites, before and during the mining operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the DMRE Regional Manager.
- ◆ On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200 mm and graded to an even surface condition. Where applicable/possible topsoil needs to be returned to its original depth over the area.

- ◆ The area shall then be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.
- ◆ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the DMRE Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a seed mix to his or her specification.

#### **Final rehabilitation:**

- ◆ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required), maintenance, and clearing of invasive plant species.
- ◆ All mining equipment, plant, and other items used during the mining period must be removed from the site (section 44 of the MPRDA).
- ◆ Waste material of any description, including receptacles, scrap, rubble and tyres, must be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
- ◆ The management of invasive plant species must be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) need to be eradicated from the site.
- ◆ Final rehabilitation must be completed within a period specified by the Regional Manager (DMRE).

Once the mining area was rehabilitated the MR Holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *“An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report”*. The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

**ii) The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity.**

Due to the nature of the mining operation, it is believed that the risk of environmental damage or pollution is of low significance. If site management implement the mitigation measures as prescribed in this document, it is believed that the impact on the receiving environment can be adequately controlled.

**iii) Potential risk of Acid Mine Drainage.**

(Indicate whether or not the mining can result in acid mine drainage).

Not applicable.

**iv) Steps taken to investigate, assess, and evaluate the impact of acid mine drainage.**

Not applicable.

**v) Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage.**

Not applicable.

**vi) Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage.**

Not applicable.

**vii) Volumes and rate of water use required for the mining, trenching or bulk sampling operation.**

As the proposed mining area is within 500 m of the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring it requires a Water Use Licence in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998) for water uses as defined in section 21 of the act. As per the Ecological and Wetland Assessment conducted by DPR Ecologist and Environmental Services dated November 2021 (attached as appendix H) the survey has indicated several areas that are considered highly sensitive and with a high conservation value and should be excluded from mining operations as far as possible (Appendix A: Map 4 of appendix H):

- The Vaal River, including the main channel and banks as well as the riparian zone or floodplain.

The estimate water use is in the region of

1320 000 liters per month. A water use licensing in terms of the NWA, 1998 application was submitted by the applicant and approval is pending with the DWS.

Areas within 500m of any of the above-mentioned water body will be considered as No-go zones which entails no change to the status quo and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the area will remain that of agriculture, crop production, and game/livestock farming with the diamond and gold resources unmined. Amongst others, the socio-economic impact of mining on current, and future land uses of the study area was considered as part of the EIA process, and discussed in this document

**viii) Has a water use license been applied for?**

The presence of the drainage lines within the mining footprint, and the use of borehole water necessitate a water use application in terms of Section 21 of the National Water Act, 1998 (Act No 36 of 1998) (NWA). The application was submitted by the applicant and approval is pending with the DWS.



**ix) Impacts to be mitigated in their respective phases**

Measures to rehabilitate the environment affected by the undertaking of any listed activity

Table 29: Impact to be mitigated in their respective phases

| ACTIVITIES<br><br>(as listed in the report)                                  | PHASE<br><br>of operation in which activity will take place.<br><br>State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post closure | SIZE AND SCALE OF DISTURBANCE<br><br>(volumes, tonnages and hectares or m <sup>2</sup> ) | MITIGATION MEASURES<br><br>(describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)               | COMPLIANCE WITH STANDARDS<br><br>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities) | TIME PERIOD FOR IMPLEMENTATION<br><br>Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required.<br><br>With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either – Upon cessation of the individual activity<br><br>or<br><br>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be. |
|--|--|--|--|---|--|
| ♦ Demarcation of site with visible beacons.                                  | Site Establishment phase   | +/- 6 ha   | Demarcation of the site will ensure that all employees are aware of the boundaries of the mining area, and that work stay within the approved area.                      | Mining is only allowed within the boundaries of the approved area.<br><br>♦ MPRDA, 2002<br>♦ NEMA, 1998   | Beacons need to be in place throughout the life of the mine.   |
| ♦ Site establishment and infrastructure development<br><br>♦ Excavation, and | Site Establishment- & Operational Phase  | +/- 6 ha   | <b>Visual Mitigation:</b><br><br>♦ The site must have a neat appearance and be kept in good condition at all times.<br><br>♦ Mining equipment must be stored neatly in a | Management of the mining activities must be in accordance with the:<br><br>♦ MPRDA, 2002<br>♦ NEMA, 1998  | Throughout the site establishment- and operational phases.   |

| ACTIVITIES  | PHASE                                   | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS  | TIME PERIOD FOR IMPLEMENTATION                            |
|---|---|-------------------------------|---|--|---|
| loading   |   |                               | <p>dedicated area with a sealed drip tray underneath when not in use.</p> <ul style="list-style-type: none"> <li>◆ The MR Holder must limit vegetation removal, and stripping of topsoil may only be done immediately prior to the mining/use of a specific area.</li> <li>◆ The excavation must be contained within the approved footprint of the mining right.</li> <li>◆ All riparian areas and watercourses (outside the mining footprint) along with the recommended 100 m buffer area are regarded as No-Go areas.</li> <li>◆ Upon closure the site must be rehabilitated and landscaped to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.</li> </ul> |  |   |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Cumulative impacts</li> </ul> | Site Establishment- & Operational Phase | +/- 6 ha                      | <p><b><u>Protection of Fauna:</u></b></p> <ul style="list-style-type: none"> <li>◆ The site manager must ensure no fauna is caught, killed, harmed, sold or played with.</li> <li>◆ Any fauna directly threatened by the operational activities must be removed to a safe location by the ECO or other suitably qualified person.</li> <li>◆ All personnel must undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Workers must be instructed to report any animals that may be trapped in the</li> </ul>                            | <p>Fauna must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul> | Throughout the site establishment- and operational phase. |

| ACTIVITIES  | PHASE   | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES  | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION                                    |
|---|---|-------------------------------|--|---|---|
|   |   |                               | <p>working area.</p> <ul style="list-style-type: none"> <li>◆ No snares may be set or nests raided for eggs or young.</li> <li>◆ All vehicles must adhere to a low speed limit (40 km/h is recommended) to avoid collisions with susceptible species such as snakes and tortoises.</li> <li>◆ When possible, no activity must be undertaken at the site between sunset and sunrise, except for security personnel guarding the operation (if needed).</li> <li>◆ Any dangerous fauna (snakes, scorpions, etc.) that are encountered during construction must not be handled or antagonised by the construction staff. A suitably qualified person(s) must be contacted to remove the animals to safety.</li> <li>◆ No litter, food or other foreign material must be thrown or left around the site and must be placed in demarcated and fenced rubbish and litter areas that are animal proof.</li> </ul> |   |   |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> </ul> | <p>Site Establishment &amp; Operational Phase</p> | <p>+/- 6 ha</p>               | <p><b><u>Archaeological, Heritage and Palaeontological Aspects:</u></b></p> <ul style="list-style-type: none"> <li>◆ All mining must be confined to the development footprint area.</li> <li>◆ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage</li> </ul>  | <p>Cultural/heritage aspects must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NHRA, 1999</li> </ul> | <p>Throughout the site establishment-, and operational phase.</p> |

| ACTIVITIES  | PHASE   | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES  | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION                                    |
|---|---|-------------------------------|--|---|---|
|   |   |                               | <p>site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</p> <ul style="list-style-type: none"> <li>◆ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.</li> <li>◆ The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify SAHRA.</li> <li>◆ Work may only continue once the go-ahead was issued by SAHRA.</li> <li>◆ The Fossil Chance Find Procedure, proposed in this document, must be implemented should fossils be uncovered.</li> </ul> |   |   |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, and loading</li> </ul> | <p>Site Establishment- and, Operational Phase</p> | <p>+/- 6 ha</p>               | <p><b><u>Loss of Agricultural Land for Duration of Mining:</u></b></p> <ul style="list-style-type: none"> <li>◆ The temporary loss of agricultural land for the duration of the mining period is acceptable to the landowner. If needed, mined-out/rehabilitated areas will revert back to agricultural use once the cover crop stabilised.</li> </ul>   | <p>Use of agricultural land must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ Closure Plan (Appendix M)</li> </ul> | <p>Throughout the site establishment-, and operational phase.</p> |

| ACTIVITIES  | PHASE                                      | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION                             |
|---|--|-------------------------------|---|---|--|
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> </ul> | Site Establishment- and, Operational Phase | +/- 6 ha                      | <p><b><u>Fugitive Dust Emission Mitigation:</u></b></p> <ul style="list-style-type: none"> <li>◆ The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).</li> <li>◆ The site manager must ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> <li>◆ Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust.</li> <li>◆ Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to mining.</li> <li>◆ The MR Holder must implement a dust management plan and conduct monthly fall-out dust monitoring on site to accurately determine the site specific dust levels;</li> <li>◆ Loads must be flattened to prevent spillage and covered during transportation on public roads.</li> <li>◆ Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.</li> <li>◆ All dust generating activities shall comply with</li> </ul> | Dust generation must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ National Dust Control Regulations, GN No R827</li> <li>◆ ASTM D1739 (SANS 1137:2012)</li> </ul> | Throughout the site establishment-, and operational phase. |

| ACTIVITIES   | PHASE  | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES  | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION  |
|--|--|-------------------------------|--|---|---|
|  |  |                               | <p>the National Dust Control Regulations, GNR 827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).</p> <ul style="list-style-type: none"> <li>◆ Best practice measures shall be implemented during the stripping of topsoil, excavating, processing, and transporting of the material from site to minimize potential dust impacts.</li> </ul>  |   |   |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, and loading</li> <li>◆ Processing gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p>Site Establishment, Operational &amp; Decommissioning Phase</p> | <p>+/- 6 ha</p>               | <p><b><u>Noise Handling:</u></b></p> <ul style="list-style-type: none"> <li>◆ The MR holder must ensure that the employee and visitors to the site conduct themselves in an acceptable manner while on site.</li> <li>◆ No loud music may be permitted at the mining area.</li> <li>◆ All mining vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).</li> <li>◆ A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA, 2004, SANS 10103:2008.</li> <li>◆ Best practice measures shall be implemented in order to minimize potential noise impacts.</li> <li>◆ Mining operations must be limited Monday – Friday from 07:30 to 17:00 and once a month on Saturdays for maintenance.</li> </ul> | <p>Noise generation must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ NRTA, 1996</li> </ul> | <p>Throughout the site establishment-, operational and decommissioning phase.</p> |

| ACTIVITIES  | PHASE   | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES  | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION                                    |
|---|---|-------------------------------|--|---|---|
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, and loading</li> <li>◆ Processing gravel</li> <li>◆ Backfilling of excavations</li> </ul> | <p>Site Establishment- and, Operational Phase</p> | <p>+/- 6 ha</p>               | <p><b><u>Topsoil Management:</u></b></p> <ul style="list-style-type: none"> <li>◆ The upper 300 mm of the soil, of the strip to be mined, must be stripped and stockpiled before mining.</li> <li>◆ Topsoil is a valuable and essential resource for rehabilitation and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.</li> <li>◆ Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The mining plan have to be such that topsoil is stockpiled for the minimum possible time.</li> <li>◆ The topsoil must be placed on a levelled area, within the mining footprint. No topsoil may be stockpiled in undisturbed areas.</li> <li>◆ Topsoil stockpiles must be protected against losses by water- and wind erosion. Stockpiles must be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants (weeds or a cover crop) on the stockpiles will help to prevent erosion.</li> <li>◆ Topsoil heaps may not exceed 2 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.</li> <li>◆ The temporary topsoil stockpiles must be kept free of invasive plant species.</li> <li>◆ Topsoil heaps to be stored longer than a period of 6 months needs to be vegetated with an</li> </ul> | <p>Topsoil stripping must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA, 2004</li> <li>◆ MPRDA, 2002</li> <li>◆ Closure Plan (Appendix M)</li> </ul> | <p>Throughout the site establishment-, and operational-phase.</p> |

| ACTIVITIES | PHASE | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES  | COMPLIANCE WITH STANDARDS | TIME PERIOD FOR IMPLEMENTATION |
|------------|-------|-------------------------------|--|---------------------------|--------------------------------|
|            |       |                               | <p>indigenous grass seed mix if vegetation does not naturally germinate within the first growth season.</p> <ul style="list-style-type: none"> <li>◆ Storm- and runoff water must be diverted around the stockpile area to prevent erosion.</li> <li>◆ The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site.</li> <li>◆ The MR holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal.</li> <li>◆ A cover crop must be planted, irrigated and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum biomass production, and any soil deficiencies must be corrected, based on a chemical analysis of the re-spread soil (if deemed necessary). It is important that rehabilitation be taken up to the point of cover crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established.</li> <li>◆ The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.</li> </ul> |                           |                                |



| ACTIVITIES   | PHASE   | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES  | COMPLIANCE WITH STANDARDS  | TIME PERIOD FOR IMPLEMENTATION  |
|--|---|-------------------------------|--|--|---|
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, and loading</li> <li>◆ Processing gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p>Site Establishment &amp; Operational-, and Decommissioning Phase</p> | <p>+/- 6 ha</p>               | <p><b><u>Management of Invasive Plant Species:</u></b></p> <ul style="list-style-type: none"> <li>◆ An invasive plant species management plan (Appendix K) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the mining activities.</li> <li>◆ All stockpiles (topsoil &amp; overburden) must be kept free of invasive plant species.</li> <li>◆ Regular monitoring for alien plants at the site must occur and could be conducted simultaneously with erosion monitoring.</li> <li>◆ Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:                             <ul style="list-style-type: none"> <li>▪ The plants can be uprooted, felled or cut off and can be destroyed completely.</li> <li>▪ The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.</li> </ul> </li> <li>◆ Clearing methods should aim to keep disturbance to a minimum and must be undertaken in accordance with relevant</li> </ul> | <p>Invader plants must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA 2004</li> <li>◆ Invasive Plant Species Management Plan (Appendix K)</li> </ul> | <p>Throughout the site establishment-, operational-, and decommissioning phase.</p> |

| ACTIVITIES   | PHASE  | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS  | TIME PERIOD FOR IMPLEMENTATION   |
|--|--|-------------------------------|---|--|--|
|  |  |                               | <p>guidelines.</p> <ul style="list-style-type: none"> <li>◆ No planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose may be allowed.</li> </ul>   |  |  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, and loading</li> <li>◆ Processing gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p>Operational-, and Decommissioning Phase</p> | <p>+/- 6 ha</p>               | <p><b><u>Waste Management:</u></b></p> <ul style="list-style-type: none"> <li>◆ Regular vehicle maintenance, repairs and services may only take place at the off-site workshop and service area. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal.</li> <li>◆ The MR Holder must ensure that employees make use of the formal ablution facilities at the site offices, alternatively the employees must be provided with a chemical toilet that must be serviced at least once a week by an accredited liquid waste handling contractor.</li> <li>◆ The use of any temporary, chemical toilet facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the MR holder.</li> <li>◆ If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every</li> </ul> | <p>Mining related waste must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> <li>◆ NEM:WA, 2008</li> <li>◆ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)</li> <li>◆ NEMA, 1998 (Section 30)</li> </ul> | <p>Throughout the site establishment-, operational- and decommissioning phase.</p> |

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| ACTIVITIES | PHASE | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS | TIME PERIOD FOR IMPLEMENTATION |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
|            |       |                               | <p>refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.</p> <ul style="list-style-type: none"> <li>◆ Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site.</li> <li>◆ Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.</li> <li>◆ Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.</li> <li>◆ Suitable covered receptacles must be available at all times and conveniently placed for the disposal of waste.</li> <li>◆ Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap etc., must be stored in a container with a closable lid at a collecting point to be collected at least once a month and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the mine area;</li> <li>◆ Biodegradable refuse must be handled as indicated above;</li> <li>◆ No waste may be buried burned on the site.</li> </ul> |                           |                                |

| ACTIVITIES  | PHASE             | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION                          |
|---|-------------------|-------------------------------|---|---|---|
|   |                   |                               | <ul style="list-style-type: none"> <li>◆ Re-use or recycling of waste products must be encouraged on site.</li> <li>◆ It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities is reported to the Department of Water and Sanitation and other relevant authorities.</li> </ul>  |   |   |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation, and loading</li> <li>◆ Processing gravel</li> <li>◆ Backfilling of excavations</li> </ul> | Operational Phase | +/- 6 ha                      | <p><b><u>Management of Health and Safety Risks:</u></b></p> <ul style="list-style-type: none"> <li>◆ Adequate ablution facilities and water for human consumption must daily be available on site.</li> <li>◆ Workers must have access to the correct personal protection equipment (PPE) as required by law.</li> <li>◆ All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).</li> </ul> | <p>All mining activities must be in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ MHSA, 1996</li> <li>◆ OHS Act, 1993</li> </ul>  | Throughout the operational-, and decommissioning phase. |
| <ul style="list-style-type: none"> <li>◆ Cumulative impacts</li> </ul>  | Operational Phase | +/- 6 ha and surrounding area | <p><b><u>Protection of Existing Infrastructure:</u></b></p> <ul style="list-style-type: none"> <li>◆ All mining activities must be contained inside the approved mining boundary.</li> <li>◆ Any structural damage, that results as a direct result of the mining at the quarry, must be repaired at the cost of the MR Holder.</li> </ul>  | <p>Mining must take place in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ MHSA, 1996</li> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ National Dust Control Regulations, GN No R827</li> <li>◆ ASTM D1739 (SANS 1137:2012)</li> <li>◆ USMB Standards</li> </ul> | Throughout the operational phase.                       |
| <ul style="list-style-type: none"> <li>◆ Excavation, and loading</li> </ul>   | Operational Phase | +/- 6 ha                      | <p><b><u>Management of Surface Water Quality:</u></b></p> <ul style="list-style-type: none"> <li>◆ Implement appropriate measures to ensure</li> </ul>  | <p>Mining must take place in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> </ul>   | Throughout the operational phase.                       |

| ACTIVITIES   | PHASE | SIZE AND SCALE OF DISTURBANCE | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS | TIME PERIOD FOR IMPLEMENTATION |
|--|-------|-------------------------------|---|---------------------------|--------------------------------|
| <ul style="list-style-type: none"> <li>◆ Cumulative impacts</li> </ul> |       |                               | <p>strict use and management of all hazardous materials used on site.</p> <ul style="list-style-type: none"> <li>◆ Operate using best practises by storing hazardous substances in an adequately sized bunded area, with appropriate safety equipment at the off-site workshop.</li> <li>◆ Collection of water within any bunded areas must be deemed hazardous and disposed of as such.</li> <li>◆ Bunded areas must be water tight and inspected for leaks on a frequent basis.</li> <li>◆ Leaks to the bunded areas must be rectified as soon as possible (within 24 hours).</li> <li>◆ Drip trays must be utilised for the collection of leaks from vehicles and machinery parked for more than an hour.</li> <li>◆ All refuelling must take place at the off-site workshop or refuelling area. Refuelling of machinery that cannot move of site must take place over drip trays.</li> <li>◆ Place spill kits on site which are operated by trained staff members for the ad hoc remediation of minor chemical and hydrocarbon spillages.</li> <li>◆ No vehicles to refuel within drainage lines, streams/riparian vegetation.</li> <li>◆ Vehicular access to the the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area must be restricted.</li> <li>◆ Implement appropriate measures to ensure</li> </ul> |                           |                                |

| ACTIVITIES   | PHASE             | SIZE AND SCALE OF DISTURBANCE       | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS  | TIME PERIOD FOR IMPLEMENTATION    |
|--|-------------------|-------------------------------------|---|--|-----------------------------------|
|  |                   |                                     | <p>strict management of potential sources of pollutants (e.g. litter, hydrocarbons from vehicles and machinery, cement during construction etc.).</p> <ul style="list-style-type: none"> <li>◆ Should a spill occur, this must be handled at the source of the leak and prevented from transpiring to the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area;</li> <li>◆ Ensure that routine maintenance on all vehicles is undertaken as per maintenance schedule and records are kept.</li> <li>◆ Waste must be stored in clearly marked containers in a demarcated area.</li> <li>◆ All waste material must be removed at the end of every working day to designated waste facilities at the main camp/suitable waste disposal facility.</li> <li>◆ Sewage spillages must be seen as hazardous waste and must be handled as such.</li> </ul> |  |                                   |
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul> | Operational Phase | ±3 km – Internal private farm roads | <p><b><u>Access Road Mitigation and Traffic Accomodation:</u></b></p> <ul style="list-style-type: none"> <li>◆ The speed of all mining equipment/vehicles must be restricted to 40 km/h on the public access roads and 20 km/h on the internal roads.</li> <li>◆ Overloading of the trucks must be prevented and proof of load weights must be filed and be available for auditing by relevant officials.</li> </ul>  | <p>All mining related traffic must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> </ul> | Throughout the operational phase. |

| ACTIVITIES   | PHASE             | SIZE AND SCALE OF DISTURBANCE       | MITIGATION MEASURES  | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION    |
|--|-------------------|-------------------------------------|--|---|-----------------------------------|
| <ul style="list-style-type: none"> <li>Cumulative impacts</li> </ul> | Operational Phase | +/- 6 ha and surrounding community. | <p><b><u>Mining Area Negatively Affecting Safety and Security of Area:</u></b></p> <ul style="list-style-type: none"> <li>Any new employees, or sub-contractors must be vetted prior to inception of their contract.</li> <li>No unauthorised personnel may be allowed to enter the mining area.</li> <li>Mining employees, including truck drivers, must be educated to report suspicious looking person/s and/or matters within the surrounding area.</li> </ul> | <p>Mining related activities must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>HBPAA, 1999</li> <li>CLAA, 2013</li> <li>PHA, 2011</li> </ul> | Throughout the operational phase. |

**e) Impact Management Outcomes**

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ( )):

Table 30: Impact Management Outcomes

| ACTIVITY  | POTENTIAL IMPACT   | ASPECTS AFFECTED | PHASE  | MITIGATION TYPE   | STANDARD TO BE ACHIEVED   |
|---|--|------------------|--|---|---|
| <p>whether listed or not listed</p> <p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc..etc.)</p> | <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)</p> |                  | <p>In which impact is anticipated</p> <p>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))</p> | <p>(modify, remedy, control, or stop) through</p> <p>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc..)</p> <p>E.g.</p> <ul style="list-style-type: none"> <li>Modify through alternative method.</li> <li>Control through noise control</li> <li>Control through management and monitoring</li> </ul> | <p>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.</p> |

| ACTIVITY   | POTENTIAL IMPACT   | ASPECTS AFFECTED  | PHASE                                      | MITIGATION TYPE  | STANDARD TO BE ACHIEVED  |
|--|--|---|--|--|--|
| <ul style="list-style-type: none"> <li>◆ Demarcation of site with visible beacons.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ No impact could be identified other than the beacons being outside the boundaries of the approved mining area.</li> </ul>   | N/A   | Site Establishment phase                   | <ul style="list-style-type: none"> <li>• Remedy through rehabilitation.</li> </ul>           | <p>Mining is only allowed within the boundaries of the approved area.</p> <ul style="list-style-type: none"> <li>◆ MPRDA, 2002</li> <li>◆ NEMA, 1998</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Excavation and loading</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Visual intrusion due to site establishment.</li> <li>◆ Visual intrusion associated with the extraction activities..</li> </ul>  | The visual impact may affect the aesthetics of the landscape.                       | Site Establishment- & Operational Phase    | <p><u>Control:</u> Proper housekeeping and implementation of progressive rehabilitation.</p> | <p>Management of the mining activities must be in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ MPRDA, 2002</li> <li>◆ NEMA, 1998</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint area.</li> </ul>   | This will impact on the biodiversity of the receiving environment.                  | Site Establishment & Operational Phase     | <p><u>Control &amp; Stop:</u> Implementing good management practices.</p>                    | <p>Fauna must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil of mining area</li> <li>◆ Excavation and loading</li> </ul> | <ul style="list-style-type: none"> <li>◆ Potential impact on archaeological artefacts or palaeontological finds.</li> <li>◆ Potential impact on archaeological artefacts or palaeontological finds.</li> <li>◆ Potential impact on areas of palaeontological concern.</li> </ul> | This could impact on the cultural and heritage legacy of the receiving environment. | Site Establishment- and, Operational Phase | <p><u>Control &amp; Stop:</u> Implementation of a chance-find procedure.</p>                 | <p>Cultural/heritage aspects must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NHRA, 1999</li> </ul>                          |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Loss of agricultural land</li> </ul>  | The impact affects  | Site Establishment- &                      | Should the proposed project be approved,   | Use of agricultural land must be   |



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| ACTIVITY  | POTENTIAL IMPACT  | ASPECTS AFFECTED  | PHASE                                      | MITIGATION TYPE  | STANDARD TO BE ACHIEVED   |
|---|---|---|--|--|---|
| topsoil and/or overburden   | for duration of mining.   | the agricultural operations of the property.  | Operational Phase                          | the operation will temporarily interrupt the agricultural activities of the footprint area, only to be reversed upon the closure of the mine. The impact could be controlled through progressive rehabilitation (if possible). | managed in accordance with the: <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ Closure Plan (Appendix M)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Dust nuisance caused by the disturbance of soil.</li> <li>◆ Dust nuisance due to the movement of earthmoving equipment.</li> <li>◆ Dust nuisance generated at the processing area.</li> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities</li> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities.</li> </ul> | Increased dust will impact on the air quality of the receiving environment.                           | Site Establishment- & Operational Phase    | <u>Control:</u> Dust suppression methods and proper housekeeping.  | Dust generation must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ National Dust Control Regulations, GN No R827</li> <li>◆ ASTM D1739 (SANS 1137:2012)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Noise nuisance caused by earthmoving machinery.</li> <li>◆ Noise nuisance generated by</li> </ul>  | Should the noise levels become excessive it may have an impact on the noise ambiance of the receiving | Site Establishment- and, Operational Phase | <u>Control:</u> Noise suppression methods and proper housekeeping.   | Noise generation must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ NRTA, 1996</li> </ul>  |

| ACTIVITY  | POTENTIAL IMPACT  | ASPECTS AFFECTED  | PHASE   | MITIGATION TYPE   | STANDARD TO BE ACHIEVED   |
|---|---|---|---|---|---|
| <ul style="list-style-type: none"> <li>◆ Backfilling of excavations</li> </ul>  | <p>earthmoving equipment.</p> <ul style="list-style-type: none"> <li>◆ Noise nuisance stemming from the processing activities.</li> <li>◆ Noise nuisance caused by machinery during the decommissioning phase.</li> </ul>   | <p>environment.</p>   |   |   |   |
| <ul style="list-style-type: none"> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Loss of stockpiled topsoil.</li> <li>◆ Potential increase in the risk of soil erosion from reinstated but denuded areas.</li> <li>◆ Potential increase in the risk of soil erosion from reinstated but denuded areas.</li> </ul> | <p>Loss of topsoil will affect the rehabilitation success upon closure of the mine.</p> | <p>Site Establishment, Operational- and Decommissioning Phase</p>       | <p><u>Control &amp; Remedy:</u> Proper housekeeping and storm water management.</p> | <p>Topsoil stripping must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA, 2004</li> <li>◆ MPRDA, 2002</li> <li>◆ Closure Plan (Appendix M)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Potential infestation of the topsoil heaps and mining area with invader plant species.</li> <li>◆ Infestation of the reinstated area with invader plant species.</li> </ul>  | <p>This will impact on the biodiversity of the receiving environment.</p>               | <p>Site Establishment &amp; Operational-, and Decommissioning Phase</p> | <p><u>Control:</u> Implementing soil- and invader plant control/management.</p>     | <p>Invader plants must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA 2004</li> <li>◆ Invasive Plant Species Management Plan (Appendix N)</li> </ul>  |

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| ACTIVITY  | POTENTIAL IMPACT  | ASPECTS AFFECTED  | PHASE  | MITIGATION TYPE   | STANDARD TO BE ACHIEVED  |
|---|---|---|--|---|--|
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages.</li> <li>◆ Soil contamination from hydrocarbon spills.</li> <li>◆ Potential contamination of environment due to improper waste management.</li> <li>◆ Potential impact associated with litter/waste left at the mining area.</li> </ul> | <p>Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the MR Holder.</p> | <p>Operational-, and Decommissioning Phase</p> | <p><u>Control &amp; Remedy:</u> Proper housekeeping and implementation of an emergency response plan and waste management plan.</p> | <p>Mining related waste must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> <li>◆ NEM:WA, 2008</li> <li>◆ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)</li> <li>◆ NEMA, 1998 (Section 30)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Unsafe working environment for employees.</li> <li>◆ Safety risk posed by unsloped areas.</li> </ul>   | <p>Unsafe working conditions or health and safety risks posed as a result of the mining activity could affect the employees and possibly the nearby residents.</p>                | <p>Operational Phase</p>                       | <p><u>Control &amp; Modify:</u> All work to take place in accordance with the applicable MHSA and OHSA legislation.</p>             | <p>All mining activities must be in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ MHSA, 1996</li> <li>◆ OHSA, 1993</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Cumulative impacts</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Potential impact on localised surface water quality.</li> <li>◆ Potential negative impact</li> </ul>   | <p>Potential impact on the water use of the surrounding community.</p>  | <p>Operational Phase</p>                       | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report .</p>  | <p>Mining must take place in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> </ul>  |

| ACTIVITY                                      | POTENTIAL IMPACT   | ASPECTS AFFECTED  | PHASE                    | MITIGATION TYPE  | STANDARD TO BE ACHIEVED  |
|---|--|---|--------------------------|--|--|
|   | <p>on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area.</p> |   |                          |  |  |
| <p>◆ Transport of concentrate to recovery</p> | <p>◆ Overloading of trucks impacting road infrastructure.</p>  | <p>Overloading negatively affects the road infrastructure used by mining related vehicles.</p>                    | <p>Operational Phase</p> | <p><u>Control:</u> No overloading to be allowed.</p>                                       | <p>All mining related traffic must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> </ul>                       |
| <p>◆ Transport of concentrate to recovery</p> | <p>◆ Degradation of the access roads.</p>  | <p>Impacting the condition of public roads may incur public complaints and additional costs to the MR Holder.</p> | <p>Operational Phase</p> | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report .</p> | <p>The access road must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> </ul>                                  |
| <p>◆ Transport of concentrate to recovery</p> | <p>◆ Traffic impact on the surrounding gravel roads as a result of the mining activity.</p>  | <p>Additional traffic impacts may incur public complaints and additional costs to the MR Holder.</p>              | <p>Operational Phase</p> | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report .</p> | <p>All mining related traffic must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> </ul>                       |
| <p>◆ Cumulative impacts</p>                   | <p>◆ Mining area negatively affecting safety and security of the surrounding area.</p>   | <p>Safety and security of the receiving environment.</p>  | <p>Operational Phase</p> | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report.</p>  | <p>Mining related activities must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>◆ HBPAA, 1999</li> <li>◆ CLAA, 2013</li> </ul> |

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| ACTIVITY | POTENTIAL IMPACT | ASPECTS AFFECTED | PHASE | MITIGATION TYPE | STANDARD TO BE ACHIEVED |
|----------|------------------|------------------|-------|-----------------|-------------------------|
|          |                  |                  |       |                 | ♦ PHA, 2011             |

**f) Impact Management Actions**

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

Table 31: Impact Management Actions

| ACTIVITY   | POTENTIAL IMPACT   | MITIGATION TYPE   | TIME PERIOD FOR IMPLEMENTATION   | COMPLIANCE WITH STANDARDS   |
|--|--|---|--|---|
| whether listed or not listed<br><br>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc..etc.) | (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)                      | (modify, remedy, control, or stop) through<br>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc.)<br><br>E.g. <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> <li>• Remedy through rehabilitation.</li> </ul> | Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.<br><br>With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either:<br><br>Upon cessation of the individual activity<br>Or .<br><br>Upon the cessation of mining bulk sampling or alluvial diamond prospecting as the case may be. | (A description of how each of the recommendations will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities) |
| <ul style="list-style-type: none"> <li>◆ Demarcation of site with visible beacons.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ No impact could be identified other than the beacons being outside the boundaries of the approved mining area.</li> </ul> | <u>Control:</u> Implementation of proper housekeeping and site management.  | Beacons need to be in place throughout the life of the mine.   | Mining is only allowed within the boundaries of the approved area. <ul style="list-style-type: none"> <li>◆ MPRDA, 2002</li> <li>◆ NEMA, 1998</li> </ul>                              |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Cumulative impacts</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Loss of areas of agricultural importance.</li> </ul>  | <u>Control:</u> Proper site management, and adherence to legislated conditions as presented in the EA and other applicable authorisations.  | Site Establishment- & Operational Phase  | Use of agricultural land must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ Closure Plan (Appendix M)</li> </ul>                  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Visual intrusion due to site establishment.</li> </ul>  | <u>Control:</u> Proper housekeeping and implementation of progressive   | Site Establishment- & Operational Phase  | Management of the mining activities must be in accordance with the:   |

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| ACTIVITY   | POTENTIAL IMPACT   | MITIGATION TYPE   | TIME PERIOD FOR IMPLEMENTATION            | COMPLIANCE WITH STANDARDS  |
|--|--|---|---|--|
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Visual intrusion associated with the extraction activities..</li> </ul>   | rehabilitation.   |   | <ul style="list-style-type: none"> <li>◆ MPRDA, 2002</li> <li>◆ NEMA, 1998</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> </ul>                                    | <ul style="list-style-type: none"> <li>◆ Potential impact on vegetation and listed and protected plant species.</li> </ul>   | <u>Control</u> : Implementing the proposed mitigation measures and keeping mining operations to the approved boundaries.  | Site Establishment- & Operational Phase   | Natural vegetated areas must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>                                      |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint area.</li> </ul>   | <u>Control &amp; Stop</u> : Implementing good management practices.   | Site Establishment & Operational Phase    | Fauna must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation and loading</li> </ul> | <ul style="list-style-type: none"> <li>◆ Potential impact on archaeological artefacts or palaeontological finds.</li> <li>◆ Potential impact on archaeological artefacts or palaeontological finds.</li> <li>◆ Potential impact on areas of palaeontological concern.</li> </ul> | <u>Control &amp; Stop</u> : Implementation of a chance-find procedure.  | Site Establishment-and, Operational Phase | Cultural/heritage aspects must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NHRA, 1999</li> </ul>                                     |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Loss of agricultural land for duration of mining.</li> </ul>  | Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint area, only to be reversed upon the closure of the mine. The impact could be controlled through progressive rehabilitation (if possible). | Site Establishment- & Operational Phase   | Use of agricultural land must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ Closure Plan (Appendix M)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Dust nuisance caused by the</li> </ul>  | <u>Control</u> : Dust suppression methods and   | Site Establishment- & Operational         | Dust generation must be managed  |

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| ACTIVITY  | POTENTIAL IMPACT   | MITIGATION TYPE   | TIME PERIOD FOR IMPLEMENTATION                                    | COMPLIANCE WITH STANDARDS  |
|---|--|---|---|--|
| <p>topsoil of the mining area</p> <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p>disturbance of soil.</p> <ul style="list-style-type: none"> <li>◆ Dust nuisance due to the movement of earthmoving equipment.</li> <li>◆ Dust nuisance generated at the processing area.</li> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities</li> </ul>                   | <p>proper housekeeping.</p>   | <p>Phase</p>  | <p>in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ National Dust Control Regulations, GN No R827</li> <li>◆ ASTM D1739 (SANS 1137:2012)</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> </ul>             | <ul style="list-style-type: none"> <li>◆ Noise nuisance generated by earthmoving equipment</li> <li>◆ Noise nuisance generated by earthmoving equipment</li> <li>◆ Noise nuisance stemming from the processing activities.</li> <li>◆ Noise nuisance caused by machinery during the decommissioning phase</li> </ul> | <p><u>Control:</u> Noise suppression methods and proper housekeeping.</p>           | <p>Site Establishment-and, Operational Phase</p>                  | <p>Noise generation must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ NRTA, 1996</li> </ul>  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Backfilling of excavations</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Loss of stockpiled topsoil.</li> <li>◆ Potential increase in the risk of soil erosion from reinstated but denuded</li> </ul>  | <p><u>Control &amp; Remedy:</u> Proper housekeeping and storm water management.</p> | <p>Site Establishment, Operational- and Decommissioning Phase</p> | <p>Topsoil stripping must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA, 2004</li> </ul>  |



| ACTIVITY   | POTENTIAL IMPACT   | MITIGATION TYPE   | TIME PERIOD FOR IMPLEMENTATION  | COMPLIANCE WITH STANDARDS  |
|--|--|---|---|--|
| <ul style="list-style-type: none"> <li>◆ Rehabilitation of processing area</li> </ul>  | <p>areas.</p> <ul style="list-style-type: none"> <li>◆ Erosion of returned topsoil after rehabilitation.</li> </ul>  |   |   | <ul style="list-style-type: none"> <li>◆ MPRDA, 2002</li> <li>◆ Closure Plan (Appendix M)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul>   | <ul style="list-style-type: none"> <li>◆ Potential infestation of the topsoil heaps and mining area with invader plant species.</li> <li>◆ Infestation of the reinstated area with invader plant species.</li> <li>◆ Infestation of the reinstated area with invader plant species.</li> </ul>   | <p><u>Control:</u> Implementing soil- and invader plant control/management.</p>   | <p>Site Establishment &amp; Operational-, and Decommissioning Phase</p> | <p>Invader plants must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA 2004</li> <li>◆ Invasive Plant Species Management Plan (Appendix N)</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil of the mining area</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages.</li> <li>◆ Soil contamination from hydrocarbon spills.</li> <li>◆ Potential contamination of environment as a result of improper waste disposal</li> <li>◆ Potential contamination of environment due to improper waste management.</li> </ul> | <p><u>Control &amp; Remedy:</u> Proper housekeeping and implementation of an emergency response plan and waste management plan.</p> | <p>Operational-, and Decommissioning Phase</p>                          | <p>Mining related waste must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> <li>◆ NEM:WA, 2008</li> <li>◆ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)</li> <li>◆ NEMA, 1998 (Section 30)</li> </ul> |

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| ACTIVITY  | POTENTIAL IMPACT  | MITIGATION TYPE   | TIME PERIOD FOR IMPLEMENTATION           | COMPLIANCE WITH STANDARDS   |
|---|---|---|--|---|
|   | <ul style="list-style-type: none"> <li>◆ Potential impact associated with litter/waste left at the mining area.</li> </ul>  |   |  |   |
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Sloping and landscaping</li> </ul> | <ul style="list-style-type: none"> <li>◆ Unsafe working environment for employees.</li> <li>◆ Safety risk posed by settling ponds</li> <li>◆ Safety risk posed by un-sloped areas.</li> </ul>   | <p><u>Control &amp; Modify:</u> All work to take place in accordance with the applicable MHSA and OHSA legislation.</p> | Operational Phase                        | <p>All mining activities must be in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ MHSA, 1996</li> <li>◆ OHSA, 1993</li> </ul>             |
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Cumulative impacts</li> </ul>                                      | <ul style="list-style-type: none"> <li>◆ Potential impact on localised surface water quality.</li> <li>◆ Potential negative impact on the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area within the affected area.</li> </ul> | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report.</p>                               | Site establishment and Operational Phase | <p>Mining must take place in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Overloading of trucks impacting road infrastructure.</li> </ul>  | <p><u>Control:</u> No overloading to be allowed.</p>  | Operational Phase                        | <p>All mining related traffic must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> </ul>                      |
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Degradation of the access roads.</li> </ul>  | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report.</p>                               | Operational Phase                        | <p>The access road must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> <li>◆ TIA recommendations.</li> </ul> |

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| ACTIVITY   | POTENTIAL IMPACT   | MITIGATION TYPE   | TIME PERIOD FOR IMPLEMENTATION | COMPLIANCE WITH STANDARDS  |
|--|--|---|--------------------------------|--|
| <ul style="list-style-type: none"> <li>◆ Transport of concentrate to recovery plant</li> </ul> | <ul style="list-style-type: none"> <li>◆ Traffic impact on the surrounding gravel roads as a result of the mining activity.</li> </ul> | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report.</p> | <p>Operational Phase</p>       | <p>All mining related traffic must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> </ul>   |
| <ul style="list-style-type: none"> <li>◆ Cumulative impacts</li> </ul>                         | <ul style="list-style-type: none"> <li>◆ Mining area negatively affecting safety and security of the surrounding area.</li> </ul>      | <p><u>Control:</u> Implementation of the mitigation measures proposed in this report.</p> | <p>Operational Phase</p>       | <p>Mining related activities must adhere to the requirements of the:</p> <ul style="list-style-type: none"> <li>◆ HBPA, 1999</li> <li>◆ CLAA, 2013</li> <li>◆ PHA, 2011</li> </ul> |

## i) Financial Provision

### (1) Determination of the amount of Financial Provision.

- (a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under Regulation 22 (2) (d) as described in 2.4 herein.**

The Applicant will implement the strip-mining method which requires the rehabilitation of an excavated area, prior to the opening of a consecutive site. Accordingly, each site of  $\pm 2$  ha will be rehabilitated before the team will move to the next mining area. As the Applicant proposes to work a maximum of 3 sites at a time, the combined footprint of disturbance computes to  $\pm 6$  ha at any given time. The applicant will comply with the minimum closure objectives as prescribed by DMRE.

- (b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties**

This report, the final EIAR & EMPR, includes all the environmental objectives in relation to closure and will be available for perusal by the landowner, I&AP's and stakeholders over a 30-days commenting period. The comments received on the draft EIAR was incorporated into the Final EIAR & EMPR.

- (c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.**

The rehabilitation plan is attached as Appendix E.

- (d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.**

The decommissioning phase will entail the final rehabilitation of the mining footprint. Final landscaping, levelling and top dressing will be done on all areas to be rehabilitated. The rehabilitation of the mining area as indicated on the rehabilitation map attached as Appendix E will comply with the minimum closure objectives as prescribed by DMRE and detailed below, and therefore is deemed compatible:

**Rehabilitation of the excavated area:**

- ◆ The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material removed from the excavation must be dumped into the excavation.
- ◆ No waste may be permitted to be deposited in the excavations.
- ◆ Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.
- ◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.
- ◆ The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within six months from closure of the site.
- ◆ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

**Rehabilitation of plant/processing area:**

- ◆ Coarse natural material used for the construction of ramps must be removed and dumped into the excavations.
- ◆ Stockpiles must be removed during the decommissioning phase, the area ripped and the topsoil returned to its original depth to provide a growth medium.

- ◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.
- ◆ On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002):
  - Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
  - The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- ◆ Photographs of the camp and office sites, before and during the mining operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the DMRE Regional Manager.
- ◆ On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200 mm and graded to an even surface condition. Where applicable/possible topsoil needs to be returned to its original depth over the area.
- ◆ The area shall then be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.
- ◆ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the DMRE Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a seed mix to his or her specification.

**Final rehabilitation:**

- ◆ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required), maintenance, and clearing of invasive plant species.
  - ◆ All mining equipment, plant, and other items used during the mining period must be removed from the site (section 44 of the MPRDA).
  - ◆ Waste material of any description, including receptacles, scrap, rubble and tyres, must be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
  - ◆ The management of invasive plant species must be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) need to be eradicated from the site.
  - ◆ Final rehabilitation must be completed within a period specified by the Regional Manager (DMRE).
- (e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.**

The calculation of the quantum for financial provision was according to Section B of the working manual. The following calculation includes the three +/-2ha footprint that will be mine at any given time.

**Mine type and saleable mineral by-product**

According to Tables B.12, B.13 and B.14

|                             |         |
|-----------------------------|---------|
| Mine type                   | Diamond |
| Saleable mineral by-product | None    |

**Risk ranking**

According to Tables B.12, B.13 and B.14

|  |              |
|--|--------------|
| Primary risk ranking (either Table B.12 or B.13) | C (Low risk) |
| Revised risk ranking (B.14)                      | N/A          |

**Environmental sensitivity of the mine area**

According to Table B.4

|  |     |
|--|-----|
| Environmental sensitivity of the mine area | Low |
|--|-----|

**Level of information**

According to Step 4.2:

|                                |           |
|--------------------------------|-----------|
| Level of information available | Extensive |
|--------------------------------|-----------|

**Identify closure components**

According to Table B.5 and site-specific conditions

| COMPONENT NO. | MAIN DESCRIPTION  | APPLICABILITY OF CLOSURE COMPONENTS |    |
|---------------|---|-------------------------------------|----|
|               |   | (CIRCLE YES OR NO)                  |    |
| 1             | Dismantling of processing plant and related structures (including overland conveyors and power lines)               | -                                   | NO |
| 2(A)          | Demolition of steel buildings and structures  | -                                   | NO |
| 2(B)          | Demolition of reinforced concrete buildings and structures  | -                                   | NO |
| 3             | Rehabilitation of access roads  | -                                   | NO |
| 4(A)          | Demolition and rehabilitation of electrified railway lines  | -                                   | NO |
| 4(B)          | Demolition and rehabilitation of non-electrified railway lines  | -                                   | NO |
| 5             | Demolition of housing and facilities  | -                                   | NO |
| 6             | Opencast rehabilitation including final voids and ramps   | YES                                 |    |
| 7             | Sealing of shafts, adits and inclines   | -                                   | NO |
| 8(A)          | Rehabilitation of overburden and spoils   | -                                   | NO |
| 8(B)          | Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)                           |                                     | NO |
| 8(C)          | Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)                              | -                                   | NO |
| 9             | Rehabilitation of subsided areas  | -                                   | NO |
| 10            | General surface rehabilitation, including grassing of all denuded areas   | YES                                 | -  |
| 11            | River diversions  | -                                   | NO |
| 12            | Fencing   | -                                   | NO |
| 13            | Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater) | -                                   | NO |
| 14            | 2 to 3 years of maintenance and aftercare   | YES                                 | -  |





**Unit rates for closure components**

According to Table B.6 master rates and multiplication factors for applicable closure components. The master rate from the DMRE Master Rates table for financial provision of 2021 was used.

| COMPONENT NO. | MAIN DESCRIPTION  | MASTER RATE | MULTIPLICATION FACTOR |
|---------------|---|-------------|-----------------------|
| 1             | Dismantling of processing plant and related structures (including overland conveyors and power lines)               |             |                       |
| 2(A)          | Demolition of steel buildings and structures  | -           | -                     |
| 2(B)          | Demolition of reinforced concrete buildings and structures  | -           | -                     |
| 3             | Rehabilitation of access roads  | -           | -                     |
| 4(A)          | Demolition and rehabilitation of electrified railway lines  | -           | -                     |
| 4(B)          | Demolition and rehabilitation of non-electrified railway lines  | -           | -                     |
| 5             | Demolition of housing and facilities  | -           | -                     |
| 6             | Opencast rehabilitation including final voids and ramps   | 268200      | 1.00                  |
| 7             | Sealing of shafts, adits and inclines   | -           | -                     |
| 8(A)          | Rehabilitation of overburden and spoils   | -           | -                     |
| 8(B)          | Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)                           | -           | -                     |
| 8(C)          | Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)                              | -           | -                     |
| 9             | Rehabilitation of subsided areas  | -           | -                     |
| 10            | General surface rehabilitation, including grassing of all denuded areas   | 141640      | -                     |
| 11            | River diversions  | -           | -                     |
| 12            | Fencing   | -           | -                     |
| 13            | Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater) | -           | -                     |
| 14            | 2 to 3 years of maintenance and aftercare   | 18 849      | 1.00                  |

**Determine weighting factors**

According to Tables B.7 and B.8

|   |                   |
|---|-------------------|
| Weighting factor 1: Nature of terrain/accessibility                                     | 1.0 (Flat)        |
| Weighting factor 2: Proximity to urban area where goods and services are to be supplied | 1.05 (Peri-Urban) |

**Calculation of closure costs**

Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision.

Table 32: Calculation of closure cost

| CALCULATION OF THE QUANTUM |   |                |            |                  |                         |                      |                           |
|----------------------------|---|----------------|------------|------------------|-------------------------|----------------------|---------------------------|
| <b>Mine:</b>               | Invest in Property 84   |                |            | <b>Location:</b> | Free State              |                      |                           |
| <b>Evaluators:</b>         | S. Smit   |                |            | <b>Date:</b>     | 6 December 2021         |                      |                           |
| No                         | Description   | Unit           | A Quantity | B Master rate    | C Multiplication factor | D Weighting factor 1 | E=A *B*C*D Amount (rands) |
|                            |   |                | Step 4.5   | Step 4.3         | Step 4.3                | Step 4.4             |                           |
| 1                          | Dismantling of processing plant and related structures (including overland conveyors and power lines) | m <sup>3</sup> | 0          | 18               | 1.00                    | 1.00                 | R 0.00                    |
| 2(A)                       | Demolition of steel buildings and structures  | m <sup>2</sup> | 0          | 256              | 1.00                    | 1.00                 | R 0.00                    |
| 2(B)                       | Demolition of reinforced concrete buildings and structures  | m <sup>2</sup> | 0          | 377              | 1.00                    | 1.00                 | R 0.00                    |
| 3                          | Rehabilitation of access roads  | m <sup>2</sup> | 0          | 46               | 1.00                    | 1.00                 | R 0.00                    |
| 4(A)                       | Demolition and rehabilitation of electrified railway lines  | m              | 0          | 444              | 1.00                    | 1.00                 | R 0.00                    |
| 4(B)                       | Demolition and rehabilitations of non-electrified railway lines                                       | m              | 0          | 242              | 1.00                    | 1.00                 | R 0.00                    |
| 5                          | Demolition of housing and/or administration facilities  | m <sup>2</sup> | 0          | 512              | 1.00                    | 1.00                 | R 0.00                    |
| 6                          | Opencast rehabilitation including final voids and ramps   | ha             | 0.2        | 268 200          | 0.04                    | 1.00                 | R 2145.6                  |
| 7                          | Sealing of shaft, audits and inclines   | m <sup>3</sup> | 0          | 137              | 1.00                    | 1.00                 | R 0.00                    |
| 8(A)                       | Rehabilitation of overburden and spoils   | ha             | 0          | 178 800          | 1.00                    | 1.00                 | R 0.00                    |
| 8(B)                       | Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)       | ha             | 0          | 222 692          | 1.00                    | 1.00                 | R 0.00                    |

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|   |  |      |     |              |      |                    |              |
|---|--|------|-----|--------------|------|--------------------|--------------|
| 8(C)  | Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste) | ha   | 0   | 646 804      | 0.51 | 1.00               | R 0.00       |
| 9   | Rehabilitation of subsided areas   | ha   | 0   | 149 718      | 1.00 | 1.00               | R 0.00       |
| 10  | General surface rehabilitation   | ha   | 5.8 | 141 640      | 1.00 | 1.00               | R 821 512.00 |
| 11  | River diversions   | ha   | 0   | 141 640      | 1.00 | 1.00               | R 0.00       |
| 12  | Fencing  | m    | 0   | 162          | 1.00 | 1.00               | R 0.00       |
| 13  | Water Management   | ha   | 0   | 53 855       | 0.17 | 1.00               | R 0.00       |
| 14  | 2 to 3 years of maintenance and aftercare  | ha   | 6   | 18 849       | 1.00 | 1.00               | R113 094.00  |
| 15(A)   | Specialists study  | Sum  | 0   |              |      |                    | R 0.00       |
| 15(B)   | Specialists study  | Sum  | 0   |              |      |                    | R 0.00       |
| Sum of items 1 to 15 above                            |  |      |     |              |      |                    | R 936 751.60 |
| Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4) |  | 1.05 |     | R 602 784.60 |      | <b>Sub Total 1</b> | R 983 589.18 |

|  |                         |  |  |  |  |                       |             |
|--|-------------------------|--|--|--|--|-----------------------|-------------|
| 1  | Preliminary and General | 6% of Subtotal 1 if Subtotal 1 <R100 000 000.00  |  |  |  |                       | R 59 015.35 |
|  |                         | 12% of Subtotal 1 if Subtotal 1 >R100 000 000.00 |  |  |  |                       | -           |
| 2  | Contingency             | 10.0% of Subtotal 1                              |  |  |  |                       | R 98 358.92 |
| <b>Sub Total 2</b>                           |                         |  |  |  |  |                       |             |
| (Subtotal 1 plus management and contingency) |                         |  |  |  |  | R 1 140 963.45        |             |
| Vat (15%)                                    |                         |  |  |  |  | R 171 144.52          |             |
| GRAND TOTAL                                  |                         |  |  |  |  |                       |             |
| (Subtotal 3 plus VAT)                        |                         |  |  |  |  | <b>R 1 312 107.97</b> |             |

According to the above calculations, the amount that will be necessary for the rehabilitation of damages caused by the operation, both at sudden closure during the normal operation of the project and at final, planned closure gives a sum total of R 1 312 107.97.

**(f) Confirm that the financial provision will be provided as determined.**

Herewith I, the person, whose name is stated below confirm that I am the person authorised to act as representative of the right holder in terms of the resolution submitted with the application. I herewith confirm that the company will provide the amount that will be determined by the Regional Manager in accordance with the prescribed guidelines.

**Mechanisms for monitoring compliance with and performance assessment the environmental management programme and reporting thereon, including**

- g) Monitoring of Impact Management Actions**
- h) Monitoring and reporting frequency**
- i) Responsible persons**
- j) Time period for implementing impact management actions**
- k) Mechanism for monitoring compliance**

Table 33: Mechanisms for monitoring compliance with and performance assessment against the EMPR and reporting thereon.

| SOURCE ACTIVITY   | IMPACTS REQUIRING MONITORING PROGRAMMES                                    | FUNCTIONAL REQUIREMENTS FOR MONITORING  | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)  | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|---|--|---|--|--|
| <ul style="list-style-type: none"> <li>◆ Demarcation of site with visible beacons.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Maintenance of beacons</li> </ul> | <ul style="list-style-type: none"> <li>◆ Visible beacons need to be established at the corners of the mining area.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure beacons are in place throughout the life of the mine.</li> </ul> | <p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

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| SOURCE ACTIVITY   | IMPACTS REQUIRING MONITORING PROGRAMMES   | FUNCTIONAL REQUIREMENTS FOR MONITORING   | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)  | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|---|---|--|--|--|
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Cumulative impacts</li> </ul>     | <p><u>Socio-Economic Environment / Land Use:</u></p> <ul style="list-style-type: none"> <li>◆ Disturbance to the surrounding agricultural practices due to the proposed mining activities.</li> </ul>       | <ul style="list-style-type: none"> <li>◆ Environmental Authorisation.</li> <li>◆ Water Use Licence.</li> </ul>   | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure that only the activities applied for as part of this application is operated once approved. Any changes to, or deviations from, the project description set out in this document must be approved, in writing, by the DMRE before such changes or deviations may be effected.</li> </ul> | <p>Applicable throughout site establishment- and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>                    |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Excavation and loading</li> </ul> | <p><u>Visual Characteristics</u></p> <ul style="list-style-type: none"> <li>◆ Visual intrusion due to site establishment.</li> <li>◆ Visual intrusion associated with the excavating activities.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Minimize the visual impact of the activity on the surrounding environment through proper site management and implementing good housekeeping practices.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure that the site have a neat appearance and is kept in good condition at all times.</li> <li>◆ Store mining equipment neatly in a dedicated area with a sealed drip tray underneath when not in use.</li> <li>◆ Limit vegetation removal, and only strip topsoil immediately</li> </ul>     | <p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

| SOURCE ACTIVITY  | IMPACTS REQUIRING MONITORING PROGRAMMES  | FUNCTIONAL REQUIREMENTS FOR MONITORING  | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|--|--|---|---|--|
|  |  |   | <p>prior to the mining/use of a specific area.</p> <ul style="list-style-type: none"> <li>◆ Contain the excavation within the approved footprint of the mining right.</li> <li>◆ Manage all riparian areas and watercourses along with the recommended 100 m buffer area as no-go areas.</li> <li>◆ Rehabilitate and landscape the site upon closure to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.</li> </ul>   |  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil of mining area</li> </ul> | <p><u>Mining, Biodiversity Conservation Areas and Vegetation</u></p> <ul style="list-style-type: none"> <li>◆ Potential impact on vegetation and listed and protected plant species.</li> <li>◆ Potential impact on vegetation and listed and protected plant species..</li> </ul> | <ul style="list-style-type: none"> <li>◆ Visible beacons indicating the boundary of the mineable area</li> <li>◆ Removal permit should protected or red data species be relocated.</li> <li>◆ Cover crop to seed reinstated areas.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Clearly demarcate the mining boundaries and contain all operations to the approved mining area.</li> <li>◆ Keep permits for the removal of protected plant species (if required) on-site and in the possession of the flora search and rescue team at all times.</li> <li>◆ Conduct a pre-commencement environmental induction for all staff on site to ensure that basic environmental principles are adhered to. This includes awareness of no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimising wildlife interactions, remaining within demarcated construction areas, etc.</li> <li>◆ Ensure that the on-site ECO provide supervision and oversee vegetation clearing activities and other activities</li> </ul> | <p>Applicable throughout site establishment-, and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

| SOURCE ACTIVITY   | IMPACTS REQUIRING MONITORING PROGRAMMES   | FUNCTIONAL REQUIREMENTS FOR MONITORING  | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|---|---|---|---|--|
|   |   |   | <p>which may cause damage to the environment, especially at the initiation of each new strip, when the majority of vegetation clearing is taking place.</p> <ul style="list-style-type: none"> <li>◆ Limit blanket clearing of vegetation to the proposed mining footprint and associated infrastructure. Prevent clearing outside of the minimum required footprint.</li> <li>◆ Strip and stockpile topsoil separately during site preparation and replace over disturbed areas on completion.</li> <li>◆ Keep all vehicles on demarcated roads and prevent unnecessary driving in the veld outside these areas.</li> <li>◆ Do not translocate plants or otherwise uprooted or disturbed it for rehabilitation or other purposes without express permission from the ECO and without the relevant permits.</li> <li>◆ Do not allow fires on-site.</li> </ul> |  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> </ul> | <p><u>Fauna:</u></p> <ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint area.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Toolbox talks to educate employees how to handle fauna that enter the work areas.</li> <li>◆ Contact number of a snake catcher and/or other faunal specialists.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure no fauna is caught, killed, harmed, sold or played with.</li> <li>◆ Arrange the ECO or other suitably qualified person to remove any fauna directly threatened by the operational activities to a safe location.</li> </ul>   | <p>Applicable throughout site establishment-, and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |



| SOURCE ACTIVITY  | IMPACTS REQUIRING MONITORING PROGRAMMES   | FUNCTIONAL REQUIREMENTS FOR MONITORING   | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)  | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|--|---|--|--|--|
|  |   |  | <ul style="list-style-type: none"> <li>◆ Conduct environmental induction with all personnel regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Instruct workers to report any animals that may be trapped in the working area.</li> <li>◆ Ensure no snares are set or nests raided for eggs or young.</li> <li>◆ Ensure all vehicles adhere to a low speed limit (40 km/h) to avoid collisions with susceptible species such as snakes and tortoises.</li> <li>◆ When possible, prevent activity at the site between sunset and sunrise, except for security personnel guarding the operation (if needed).</li> <li>◆ Do not handle any dangerous fauna that are encountered. Contact a suitable qualified person to remove the animals to safety.</li> <li>◆ Prevent litter, food or other foreign material being thrown or left around the site.</li> </ul> |  |
| <ul style="list-style-type: none"> <li>◆ Site establishment and infrastructure development</li> <li>◆ Stripping and stockpiling of topsoil of mining area</li> <li>◆ Excavation and loading</li> </ul> | <p><u>Cultural and Heritage Environment:</u></p> <ul style="list-style-type: none"> <li>◆ Potential impact on areas of palaeontological concern.</li> <li>◆ Potential impact on areas of palaeontological concern.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Contact number of an archaeologist &amp; palaeontologist that can be contacted when a discovery is made on site.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Confine all mining to the development footprint area.</li> <li>◆ Implement the following change find procedure when</li> </ul>  | <p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

| SOURCE ACTIVITY  | IMPACTS REQUIRING MONITORING PROGRAMMES   | FUNCTIONAL REQUIREMENTS FOR MONITORING | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS  |
|--|---|--|---|---|
|  |   |  | <p>discoveries are made on site:</p> <ul style="list-style-type: none"> <li>▪ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</li> <li>▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.</li> <li>▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify SAHRA.</li> <li>▪ Work may only continue once the go-ahead was issued by SAHRA.</li> </ul> <p>◆ Implement the Fossil Chance Find Procedure, proposed in this document, should fossils be uncovered.</p> |   |
| <p>◆ Stripping and stockpiling of topsoil of mining area</p> | <p><u>Socio-Economic Environment / Land Use:</u></p> <p>◆ Loss of agricultural land for duration of mining.</p> | <p>◆ Mining schedule</p>               | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ If needed, sign mined-out/rehabilitated areas back to</li> </ul>   | <p>Applicable throughout site establishment- and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

| SOURCE ACTIVITY  | IMPACTS REQUIRING MONITORING PROGRAMMES  | FUNCTIONAL REQUIREMENTS FOR MONITORING   | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|--|--|--|---|--|
| <ul style="list-style-type: none"> <li>♦ Stripping and stockpiling of topsoil of mining area</li> </ul>    | <p><u>Hydrolog and Geohydrology:</u></p> <ul style="list-style-type: none"> <li>♦ Potential loss of riparian vegetation.</li> </ul>          | <ul style="list-style-type: none"> <li>♦ Beacons to contain mining to the approved footprint.</li> </ul>                           | <p>agricultural use once the cover crop stabilised.</p> <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>♦ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>♦ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>♦ Adhere to the proposed mine plan, presented in this report.</li> <li>♦ Regard all riparian areas and watercourses along with the recommended 100 m buffer area as no-go area.</li> <li>♦ Keep vegetation clearing within the development footprint to a minimum and implement phased development.</li> <li>♦ Place all material stockpiles outside drainage lines and watercourse areas.</li> <li>♦ Implement the erosion control mitigation measures described in this document.</li> <li>♦ Only disturb the vegetation within the identified footprint.</li> <li>♦ Ensure only the staff conducting the Invasive Alien Plant monitoring and eradication enters the semi-ephemeral stream.</li> </ul> | <p>Applicable throughout site establishment-, and operational phases.</p> <ul style="list-style-type: none"> <li>♦ Daily compliance monitoring by site management.</li> <li>♦ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |
| <ul style="list-style-type: none"> <li>♦ Stripping and stockpiling of topsoil and/or overburden</li> </ul> | <p><u>Air Quality and Noise Ambiance:</u></p> <ul style="list-style-type: none"> <li>♦ Dust nuisance as a result of stripping and</li> </ul> | <ul style="list-style-type: none"> <li>♦ Dust suppression equipment such as a water car</li> <li>♦ Signage that clearly</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>♦ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>♦ Compliance to be monitored by the independent Environmental Control Officer during the annual</li> </ul>  | <p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>♦ Daily compliance monitoring by site</li> </ul>  |

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| SOURCE ACTIVITY   | IMPACTS REQUIRING MONITORING PROGRAMMES   | FUNCTIONAL REQUIREMENTS FOR MONITORING  | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|---|---|---|---|--|
| <ul style="list-style-type: none"> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p>stockpiling of topsoil/overburden.</p> <ul style="list-style-type: none"> <li>◆ Dust nuisance due to the movement of earthmoving equipment</li> <li>◆ Dust nuisance generated at the processing area.</li> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities</li> <li>◆ Dust nuisance generated as a result of the rehabilitation/landscaping activities</li> </ul> | <p>reduce the speed on the access roads.</p> <ul style="list-style-type: none"> <li>◆ Cover crop to re-vegetate denuded areas.</li> <li>◆ Schedule for weekly cleaning mining infrastructure.</li> <li>◆ Dust Management Plan and fallout dust monitoring equipment.</li> </ul> | <p>environmental audit.</p> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Control the liberation of dust into the surrounding environment by the use of; inter alia, water spraying and/or other dust-allaying agents.</li> <li>◆ Ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> <li>◆ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust.</li> <li>◆ Minimise areas devoid of vegetation, and only remove vegetation immediately prior to mining.</li> <li>◆ Implement a dust management plan and conduct monthly fall-out dust monitoring on site to accurately determine the site specific dust levels.</li> <li>◆ Flatten and cover loads to prevent spillage of material during transportation on public roads.</li> <li>◆ Consider weather conditions upon commencement of daily operations. Limit operations during very windy periods.</li> <li>◆ Ensure dust-generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012).</li> <li>◆ Implement best practice measures during the stripping of topsoil, loading, and transporting of the mineral from the site to minimize potential dust impacts.</li> </ul> | <p>management.</p> <ul style="list-style-type: none"> <li>◆ Monthly compliance monitoring by dust monitoring contractor.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of</li> </ul>  | <p><u>Air Quality and Noise Ambiance:</u></p>   | <ul style="list-style-type: none"> <li>◆ Silencers fitted to all project related vehicles,</li> </ul>   | <p><u>Role:</u></p>   | <p>Applicable throughout site establishment-, operational-, and</p>  |

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| SOURCE ACTIVITY  | IMPACTS REQUIRING MONITORING PROGRAMMES  | FUNCTIONAL REQUIREMENTS FOR MONITORING   | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS  |
|--|--|--|---|---|
| <ul style="list-style-type: none"> <li>◆ topsoil and/or overburden</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Noise nuisance caused by earthmoving machinery.</li> <li>◆ Noise nuisance generated by earthmoving equipment.</li> <li>◆ Noise nuisance stemming from the processing activities.</li> <li>◆ Noise nuisance caused by machinery during the decommissioning phase.</li> </ul> | <ul style="list-style-type: none"> <li>◆ and the use of vehicles that are in road worthy condition in terms of the National Road Traffic Act, 1996.</li> <li>◆ Vibration- and noise monitoring equipment.</li> <li>◆ Work schedule to adhere to allowable work hours.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure that employee and visitors to the site conduct themselves in an acceptable manner while on site.</li> <li>◆ Do not permit loud music at the mining area.</li> <li>◆ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996.</li> <li>◆ Appoint a qualified occupational hygienist to quarterly monitor and report on the personal noise exposure of the employees working at the mine. Monitoring must be done in accordance with the SANS10083:2004 (Edition 5) sampling method as well as NEM:AQA, 2004, SANS 10103:2008.</li> <li>◆ Implement best practice measures to minimise potential noise impacts.</li> <li>◆ Limit mining operations to Monday – Friday from 07:30 to 17:00 and once a month on Saturdays for maintenance..</li> </ul> | <ul style="list-style-type: none"> <li>◆ decommissioning phases.</li> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Quarterly reporting by a qualified occupation hygienist.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Sloping and</li> </ul>  | <p><u>Geology and Soil:</u></p> <ul style="list-style-type: none"> <li>◆ Loss of stockpiled topsoil.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Earthmoving equipment to strip, stockpile and spread the topsoil.</li> <li>◆ Designated team to</li> </ul>  | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Applicable throughout site establishment-, and operational phases.</li> <li>◆ Daily compliance monitoring by site management.</li> </ul>   |

| SOURCE ACTIVITY | IMPACTS REQUIRING MONITORING PROGRAMMES | FUNCTIONAL REQUIREMENTS FOR MONITORING  | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS                                |
|-----------------|---|---|---|---|
| landscaping     |   | <p>control weeds/invaser plant species that may germinate on the topsoil heaps.</p> <ul style="list-style-type: none"> <li>◆ Cover crop to vegetate topsoil heaps (when needed) and reinstated soil.</li> </ul> | <p>environmental audit.</p> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Strip and stockpile the upper 300 mm of the soil before mining.</li> <li>◆ Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process.</li> <li>◆ Ensure topsoil stripping, stockpiling and re-spreading is done in a systematic way. Plan mining in such a way that topsoil is stockpiled for the minimum possible time.</li> <li>◆ Place the topsoil heaps on a levelled area within the mining footprint area. Do not stockpile topsoil in undisturbed areas.</li> <li>◆ Protect topsoil stockpiles against losses by water- and wind erosion. Position stockpiles so as not to be vulnerable to erosion by wind and water. Establish plants (weeds or a cover crop) on the stockpiles to prevent erosion.</li> <li>◆ Ensure that topsoil heaps do not exceed 2 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.</li> <li>◆ Keep temporary topsoil stockpiles free of invasive plant species.</li> <li>◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The</li> </ul> | <ul style="list-style-type: none"> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

| SOURCE ACTIVITY   | IMPACTS REQUIRING MONITORING PROGRAMMES  | FUNCTIONAL REQUIREMENTS FOR MONITORING   | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)   | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|---|--|--|---|--|
|   |  |  | <p>soil surface and geomorphology should also be re-instated to its natural condition and shape.</p> <ul style="list-style-type: none"> <li>◆ Vegetate topsoil heaps to be stored longer than 6 months with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season.</li> <li>◆ Divert storm- and runoff water around the stockpile area to prevent erosion.</li> <li>◆ Spread the topsoil evenly, to a depth of 300 m, over the rehabilitated area upon closure of the site.</li> <li>◆ Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season.</li> <li>◆ Plant a cover crop immediately after spreading topsoil to stabilise the soil and protect it from erosion. Fertilise the cover crop for optimum production. Rehabilitation extends until the first cover crop is well established.</li> <li>◆ Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.</li> </ul> |  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Sloping and landscaping</li> </ul> | <p><u>Hydrology and Geohydrology:</u></p> <ul style="list-style-type: none"> <li>◆ Potential erosion of denuded areas.</li> <li>◆ Erosion of returned topsoil after rehabilitation.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Rehabilitation Plan</li> <li>◆ Cover crop to be established on reinstated areas.</li> <li>◆ Erosion control infrastructure (if necessary).</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Restrict polluting activities including storage of mining fleet,</li> </ul>  | <p>Applicable throughout site establishment-, and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

| SOURCE ACTIVITY | IMPACTS REQUIRING MONITORING PROGRAMMES | FUNCTIONAL REQUIREMENTS FOR MONITORING | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)  | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS |
|-----------------|---|--|--|--|
|                 |   |  | <p>equipment and vehicle maintenance yards to impermeable hard standing surfaces at the workshop areas that formally drain to a dirty water drainage system at the site.</p> <ul style="list-style-type: none"> <li>◆ Contain all fuels and chemicals stored or used on site within fit for purpose containers and store it within designated storage areas. Ensure that the designated storage area is situated on an impermeable surface with a perimeter bund and a drainage sump. Size the volume of the bund and sump to contain at least 110% of the total volume of the fuel and chemicals being stored within the designated storage area. Add a roof to the storage area to prevent inflow of rainwater, which would require the sump to be emptied frequently.</li> <li>◆ Use existing roads as far as possible.</li> <li>◆ Prevent activities or movement of any mining vehicles within the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the mining area.</li> <li>◆ Establish a Rehabilitation Plan addressing phase rehabilitation methods where areas that are no longer mined or utilised, are systematically rehabilitated. Rectify any erosion problems within the mining area as a result of the mining activities within 24 hours and monitor the area thereafter to prevent re-occurrence.</li> <li>◆ Re-vegetate all bare areas resulting from the development, post-operation, with locally occurring species, to bind the soil and limit erosion potential.</li> <li>◆ Regularly monitor roads and other disturbed areas within the project area for erosion problems and once remediated ensure follow-up monitoring is implemented.</li> <li>◆ Use silt/sediment traps/barriers where there is a danger of topsoil or material stockpiles eroding and entering</li> </ul> |  |



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|---|---|--|--|--|
|   |   |  | <p>downstream drainage lines and other sensitive areas. Regularly maintain and clear these sediment/silt barriers to ensure effective drainage of the area.</p> <ul style="list-style-type: none"> <li>◆ When deemed necessary, construct gabions and/or other stabilisation features to prevent erosion.</li> <li>◆ Limit erosion by ensuring that mine vehicles and human movement is limited to project-specific dedicated access ways.</li> <li>◆ Divert storm water around the topsoil heaps and mining areas to prevent erosion.</li> <li>◆ Protect stockpiles from erosion, stored it on flat areas, and surround it by appropriate berms where possible.</li> <li>◆ Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS.</li> </ul> |  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Sloping and landscaping</li> </ul> | <p><u>Mining, Biodiversity and Vegetation:</u></p> <ul style="list-style-type: none"> <li>◆ Infestation of the topsoil heaps and mining area with invader plant species.</li> <li>◆ Infestation of the reinstated area with invader plant species.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Designated team to cut or pull out invasive plant species that germinated on site.</li> <li>◆ Herbicide application equipment.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Implement an invasive plant species management plan at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA, 2004. Do weed/alien clearing on an ongoing basis throughout the life of the mining activities.</li> <li>◆ Keep all stockpiles (topsoil &amp; overburden) free of invasive plant species.</li> </ul>                         | <p>Throughout the site establishment-, and operational phase.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

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|   |   |  | <ul style="list-style-type: none"> <li>◆ Regularly monitor the site for alien plants.</li> <li>◆ Control declared invader or exotic species on the rehabilitated areas.</li> <li>◆ Keep disturbance to a minimum when clearing.</li> <li>◆ No planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose may be allowed.</li> <li>◆ Annually monitor and eradicate problem species along the drainage lines and within the annual watercourse.</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p><u>General</u></p> <ul style="list-style-type: none"> <li>◆ Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages.</li> <li>◆ Soil contamination from hydrocarbon spills.</li> <li>◆ Potential contamination of environment due to improper waste management.</li> <li>◆ Potential impact associated with litter/waste left at the mining area.</li> </ul> | <ul style="list-style-type: none"> <li>◆ Sealed drip trays.</li> <li>◆ Formal waste disposal system with waste registers.</li> <li>◆ Covered refuse bins.</li> <li>◆ Oil spill kit.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure regular vehicle maintenance, repairs and services only take place at the off-site workshop and service area. Ensure drip trays are present if emergency repairs are needed on equipment not able to move to the workshop. Dispose all waste products in a closed container/bin to be removed from the emergency service area (same day) to the workshop in order to ensure proper disposal.</li> <li>◆ Ensure that employees make use of the formal ablution facilities at the site offices, alternatively provide them with a chemical toilet that is serviced at least once a week by an accredited liquid waste handling contractor.</li> <li>◆ Ensure that the use of any temporary, chemical toilet</li> </ul> | <p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

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|-----------------|---|--|---|--|
|                 |   |  | <p>facilities does not cause pollution to water sources or pose a health hazard. In addition, prevent any form of secondary pollution from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately.</p> <ul style="list-style-type: none"> <li>◆ If a diesel bowser is used on site, equip it with a drip tray at all times. Ensure that drip trays are used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.</li> <li>◆ Clean drip trays after use. Do not use dirty drip trays.</li> <li>◆ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.</li> <li>◆ Should spillage occur, such as oil or diesel leaking from a burst pipe, collect the contaminated soil, within the first hour of occurrence, in a suitable receptacle and remove it from the site, either for resale or for appropriate disposal at a recognized facility. File proof.</li> <li>◆ Place suitable covered receptacles at convenient places for disposal of waste.</li> <li>◆ Store non-biodegradable refuse in a container with a closable lid at a collecting point to be collected at least once a month and disposed of at a recognised landfill site. Do not allow the dumping of refuse on or in the vicinity of the mine area.</li> <li>◆ Handle biodegradable refuse as indicated above.</li> <li>◆ Prevent the burning or burying of waste on site.</li> <li>◆ Encourage re-use and/or recycling of waste products on site.</li> <li>◆ Report any significant spillage of chemicals, fuels etc.</li> </ul> |  |

INVEST IN PROPERTY 84 (PTY) LTD– FINAL EIAR & EMPR



| SOURCE ACTIVITY   | IMPACTS REQUIRING MONITORING PROGRAMMES  | FUNCTIONAL REQUIREMENTS FOR MONITORING   | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)  | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS   |
|---|--|--|--|--|
|   |  |  | during the lifespan of the mining activities to the DWS and other relevant authorities.  |  |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> <li>◆ Rehabilitation of processing area</li> </ul> | <p><u>General:</u></p> <ul style="list-style-type: none"> <li>◆ Unsafe working environment for employees.</li> <li>◆ Safety risk posed by un-sloped areas.</li> </ul>  | <ul style="list-style-type: none"> <li>◆ Stocked first aid box.</li> <li>◆ Level 1 certified first aider.</li> <li>◆ All appointments in terms of the Mine Health and Safety Act, 1996.</li> </ul>           | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure adequate ablution facilities and water for human consumption are daily available on site.</li> <li>◆ Ensure that workers have access to the correct PPE as required by law.</li> <li>◆ Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).</li> </ul> | <p>Applicable throughout decommissioning phase.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>               |
| <ul style="list-style-type: none"> <li>◆ Stripping and stockpiling of topsoil and/or overburden</li> <li>◆ Excavation and loading</li> <li>◆ Processing of gravel</li> <li>◆ Backfilling of excavations</li> </ul>  | <p><u>Hydrology and Geohydrology:</u></p> <ul style="list-style-type: none"> <li>◆ Potential impact on localised surface water quality.</li> <li>◆ Potential impact on water quality the Vaal River the floodplain and riparian zone as well as the lateral drainage lines and small depressions or pans occurring in the</li> </ul> | <ul style="list-style-type: none"> <li>◆ Visible beacons indicating the boundary of the mineable area.</li> <li>◆ Waste handling receptacles/structures and drip trays.</li> <li>◆ Oil spill kit.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Implement appropriate measures to ensure strict use and management of all hazardous materials used on site.</li> <li>◆ Operate using best practises by storing hazardous</li> </ul>   | <p>Throughout the site establishment-, and operational phase.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

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|---|---|--|--|--|
| <ul style="list-style-type: none"> <li>◆ Rehabilitation of processing area</li> <li>◆ Cumulative impacts</li> </ul> | <p>mining area.</p>                     |  | <p>substances in an adequately sized bunded area, with appropriate safety equipment at the off-site workshop.</p> <ul style="list-style-type: none"> <li>◆ Consider any water that collects within a bunded area as hazardous and dispose as such.</li> <li>◆ Ensure bunded areas are water tight and frequently inspect for leaks.</li> <li>◆ Rectify leaks to the bunded areas within 24 hours.</li> <li>◆ Use drip trays to collect leaks from vehicles and machinery parked for more than an hour.</li> <li>◆ Ensure all refuelling takes place at the off-site workshop or refuelling area. Refuel machinery that cannot move of site over drip trays.</li> <li>◆ Place spill kits on site which are operated by trained staff members for the ad hoc remediation of minor chemical and hydrocarbon spillages.</li> <li>◆ Do not refuel any vehicles within drainage lines, streams/riparian vegetation.</li> <li>◆ Implement appropriate measures to ensure strict management of potential sources of pollutants (e.g. litter, hydrocarbons from vehicles and machinery, cement during construction etc.).</li> <li>◆ Conduct routine maintenance on all vehicles as per maintenance schedule and keep records.</li> <li>◆ Store waste in clearly marked containers in a demarcated area.</li> <li>◆ Remove all waste material at the end of every work day to the designated waste facilities at the main camp/suitable waste disposal facility.</li> <li>◆ Treat sewage spills as hazardous waste and handle as</li> </ul> |  |

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|------------------------|---|---|---|---|
|                        |   |   | such.<br>♦ Ensure that the capacity of these dams is sufficient to store all surface ("dirty") without overflowing and subsequently entering the annual stream.   |   |
| ♦ Processing of gravel | <u>Existing Infrastructure:</u><br>♦ Overloading of trucks impacting road infrastructure.<br>♦ Degradation of the access roads.<br>♦ Traffic impact on the surrounding gravel roads as a result of the mining activity. | ♦ Earthmoving equipment to maintain the gravel pavement structure of the road.<br>♦ Weighing devise to prevent overloading.                                       | <u>Role:</u><br>♦ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.<br>♦ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.<br><br><u>Responsibility:</u><br>♦ Restrict the speed of all mining equipment/vehicles to 40 km/h on the public access roads and 20 km/h on the internal roads.<br>♦ Prevent the overloading of the trucks, and file proof of load weights for auditing purposes. | Applicable throughout operational-, and decommissioning phases.<br>♦ Daily compliance monitoring by site management.<br>♦ Annual compliance monitoring of site by an Environmental Control Officer. |
| ♦ Cumulative impacts   | <u>Socio-Economic Environment / Land Use:</u><br>♦ Expansion of mining area negatively affecting safety and security of the surrounding area.   | ♦ Signage restricting entry to the mining area.<br>♦ Toolbox talks regarding safety and security.<br>♦ Community based discussion forums such as WhatsApp groups. | <u>Role:</u><br>♦ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.<br>♦ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.<br><br><u>Responsibility:</u><br>♦ Ensure any new employees, or sub-contractors are vetted prior to inception of their contract.<br>♦ Prohibit entry of unauthorised personnel into mining area.  | Throughout the site establishment-, and operational phase.<br>♦ Daily compliance monitoring by site management.<br>♦ Annual compliance monitoring of site by an Environmental Control Officer.      |

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|---|--|---|---|--|
|   |  |   | <ul style="list-style-type: none"> <li>◆ Educate mining employees, including truck drivers, to report suspicious looking person/s and/or matters within the surrounding area.</li> <li>◆ Maintain communication between the mine and surrounding landowners for the duration of the site establishment-, operational- and decommissioning phases.</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>◆ Sloping and landscaping</li> </ul> | <p><u>Topography:</u></p> <ul style="list-style-type: none"> <li>◆ Landscaping of Mining Area</li> </ul> | <ul style="list-style-type: none"> <li>◆ Earthmoving equipment to reinstate mined-out areas.</li> </ul> | <p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Place overburden in the excavated area.</li> <li>◆ Dump rocks and coarse material removed from the excavation into the excavation.</li> <li>◆ Remove and dump coarse natural material used for the construction of ramps into the excavations.</li> <li>◆ Remove stockpiles during the decommissioning phase, rip the area and return the topsoil to its original depth to provide a growth medium.</li> <li>◆ Do not deposit waste in the excavations.</li> <li>◆ Once overburden, rocks and coarse natural materials have been added to the excavation and it was profiled with acceptable contours and erosion control measures, return the topsoil previously stored to its original depth over the area.</li> <li>◆ Correct topsoil and seedbank management will be paramount to rehabilitation. Where disturbance or excavation will occur upper 30 cm, or topsoil, should be</li> </ul> | <p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul> |

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|-----------------|---|--|---|--|
|                 |   |  | <p>removed together with the vegetation and stored on the site. The topsoil together with the seedbank and any vegetation material should then be replaced on top of the rehabilitated soil surface. Subsoil should be used as backfilling and not as top dressing. Only removed topsoil should be utilised to rehabilitate the disturbed surface. The soil surface and geomorphology should also be re-instated to its natural condition and shape.</p> <ul style="list-style-type: none"> <li>◆ Fertilise the area to allow vegetation to establish rapidly. Seed the site with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.</li> <li>◆ If instructed by the Regional Manager analyse the soil and rectify any deleterious effects on the soil arising from the mining operation. Seed the area with a vegetation seed mix to his or her specification.</li> <li>◆ Deal with all structures or objects in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) on completion of operations.</li> <li>◆ On completion of mining operations, scarify the surface of all plant-, and/or stockpiling areas, if compacted due to hauling and dumping operations, to a depth of at least 200 mm and grade it to an even surface condition. Where applicable/possible return the topsoil to its original depth over the area.</li> </ul> |  |



**l) Indicate the frequency of the submission of the performance assessment report.**

An Environmental Audit Report in accordance with Appendix 7 as prescribed in Regulation 34 of the EIA Regulations, 2014 (as amended) will annually be submitted to DMRE for compliance monitoring purposes or in accordance with the frequency stipulated by the Environmental Authorisation.

**m) Environmental Awareness Plan**

**i) Manner in which the Applicant intends to inform his or her employees of any environmental risk which may result from their work.**

Once the application was approved, a copy of the amended EMPR will be handed to the site manager. An induction meeting will be held with the mining related employees (operator & management) to inform them of the Basic Rules of Conduct with regard to the environment.

**ii) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.**

The operations manager must ensure that he/she understands the EMPR document and its requirement and commitments before any mining takes place. An Environmental Control Officer needs to check compliance of the mining activities to the management programmes described in the EMPR.

The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst performing their tasks.

◆ **Site Management:**

- Stay within boundaries of site – do not enter adjacent properties
- Keep tools and material properly stored
- Smoke only in designated areas
- Use toilets provided – report full or leaking toilets

◆ **Water Management and Erosion:**

- Check that rainwater flows around work areas and are not contaminated
- Report any erosion
- Check that dirty water is kept from clean water

◆ **Waste Management:**

- Take care of your own waste
- Place waste in containers and always close lid
- Don't burn waste
- Pick-up any litter laying around

◆ **Hazardous Waste Management (Petrol, Oil, Diesel, Grease)**

- Never mix general waste with hazardous waste
- Use only sealed, non-leaking containers
- Keep all containers closed and store only in approved areas
- Always put drip trays under vehicles and machinery
- Empty drip trays after rain
- Stop leaks and spills, if safe
  - ✓ Keep spilled liquids moving away
  - ✓ Immediately report the spill to the site manager/supervision
  - ✓ Locate spill kit/supplies and use to clean-up, if safe
  - ✓ Place spill clean-up wastes in proper containers
  - ✓ Label containers and move to approved storage area

◆ **Discoveries:**

- Stop work immediately
- Notify site manager/supervisor
- Includes – Archaeological finds, Cultural artefacts, Contaminated water, Pipes, Containers, Tanks and drums, Any buried structures

◆ **Air Quality:**

- Wear protection when working in very dusty areas
- Implement dust control measures:
  - ✓ Water all roads and work areas according to instructions
  - ✓ Minimize handling of material
  - ✓ Obey speed limit and cover trucks

◆ **Driving and Noise:**

- Use only approved access roads
- Respect speed limits

- Only use turn-around areas – no crisscrossing through undisturbed areas
- Avoid unnecessary loud noises
- Report or repair noisy vehicles

◆ **Vegetation and Animal life:**

- Do not remove any plants or trees without approval of the site manager
- Do not collect fire wood
- Do not catch, kill, harm, sell or play with any animal, reptile, bird or amphibian on site
- Report any animal trapped in the work area
- Do not set snares or raid nests for eggs or young

◆ **Fire Management:**

- Do not light any fires on site, unless contained in a drum at demarcated area
- Put cigarette butts in a rubbish bin
- Know the position of firefighting equipment
- Report all fires
- Don't burn waste or vegetation

**n) Specific information required by the Competent Authority**

(Among others, confirm that the financial provision will be reviewed annually).

The MR Holder undertakes to annually review and update the financial provision calculation, upon which it will be submitted to DMRE for review and approved as being sufficient to cover the environmental liability at the time and for closure of the mine at that time.

## 2. UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&AP's;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant;   
and
- d) the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed;

A handwritten signature in black ink, appearing to read 'Sint', written over a light grey rectangular background.

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Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

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Name of Company:

February 2022

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Date:



# UNDERTAKING

I,.....the undersigned and duly authorised thereto  
by.....*Invest In Property 84 (Pty) Ltd*.....

Company / ~~Closed Corporation~~ / Municipality or Council  
(Delete whichever is not applicable)

hereby undertake to implement all the aspects contained in the ~~BAR and EMPR~~ / EIA and EMPR  
and accept full responsibility therefore.  
(Delete whichever is not applicable)

SIGNED at ..... this ..... day ..... 2021

## FINAL DOCUMENT TO BE SIGNED BY APPLICANT

\_\_\_\_\_  
SIGNATURE

### WITNESSES:

1.....

2.....

Official use

## APPROVAL

Approved in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998),  
as amended.

SIGNED at ..... this ..... day ..... 2021

\_\_\_\_\_  
**REGIONAL MANAGER**  
**Free State Region**

Undertaking/eg

**-END-**

# APPENDIX A1

## REGULATION 2(2) MINE PLAN



# APPENDIX A2

# REGULATION 42 MINE PLAN





# APPENDIX B

## LOCALITY MAP





# APPENDIX C

## C1 - SITE LAYOUT MAP

## C2 - SITE ACTIVITIES MAP

# APPENDIX D

# SURROUNDING LAND USE MAP



# APPENDIX E

# REHABILITATION MAP



# APPENDIX F1

# INVEST IN PROPERTY 84 PROSPECTING RIGHT



# APPENDIX G1

# COMMENTS AND RESPONSE REPORT



# APPENDIX G2

# PROOF OF PUBLIC PARTICIPATION



# APPENDIX H

## ECOLOGICAL

## AND

## WETLAND

## ASSESSMENT



# APPENDIX I

# HERITAGE IMPACT ASSESSMENT / PALAEOLOGICAL IMPACT ASSESSMENT



# APPENDIX J

# SOCIAL AND LABOUR PLAN



# APPENDIX K

# INVASIVE PLANT SPECIES MANAGEMENT PLAN

# APPENDIX L

# SUPPORTING IMPACT ASSESSMENT

# APPENDIX M

# CLOSURE PLAN



# APPENDIX N

# PHOTOGRAPHS OF THE APPLICATION AREA



# APPENDIX O

## CV AND EXPERIENCE OF EAP

