



**mineral resources**

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

**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).

**NAME OF APPLICANT:** CP Concrete Pty Ltd  
**TEL NO:** 023 626 2014  
**FAX NO:** None  
**POSTAL ADDRESS:** P.O. Box 339, Robertson, 6705  
**PHYSICAL ADDRESS:** Buitenverwacht Farm, Robertson  
**FILE REFERENCE NUMBER SAMRAD:** WC 30/5/1/3/2/10100MP

## 1. 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 Authorisation 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 authorisation 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 Authorisation 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.

## 2. 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

#### 3. Contact Person and correspondence address

##### a) Details of Greenmined Environmental

In terms of NEMA the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the EIA of any activities regulated in terms of the aforementioned Act. CP Concrete (Pty) Ltd appointed Greenmined Environmental to undertake the study needed. Greenmined Environmental has no vested interest in CP Concrete (Pty) Ltd or the proposed project and hereby declares its independence as required by the EIA Regulations.

##### i) Details of the EAP

Name of the Practitioner: Ms. Christine Fouche (Senior Environmental Specialist)

Tel No: 021 851 2673

Fax No: 086 546 0579

E-mail address: [christine.f@greenmined.co.za](mailto:christine.f@greenmined.co.za)

##### ii) Expertise of the EAP

###### (1) The qualifications of the EAP (with evidence).

Ms. Fouche has a Diploma in Nature Conservation and a BSc in Botany and Zoology. Full CV with evidence is attached as Appendix L.

###### (2) Summary of the EAP's past experience (In carrying out the Environmental Impact Assessment Procedure)

Ms Fouche has ten years' experience in doing Environmental Impact Assessments and Mining Applications in South Africa. See a list of past project attached as Appendix M.

##### b) Description of the property

<b>Farm Name:</b>	Portion 3 of the farm Klaas Voogds Rivier 37
<b>Application area (Ha)</b>	4.9 ha
<b>Magisterial district:</b>	Robertson
<b>Distance and direction from nearest town</b>	±12 km east of Robertson ±8 km west of Ashton
<b>21 digit Surveyor General Code for each farm portion</b>	C0650000000003700003

### **c) Locality map**

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

The requested map is attached as Appendix A.

### **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, CP Concrete (Pty) Ltd, intends to crush and screen stockpiled stone/rock on a 4.9 ha area on Portion 3 of the farm Klaas Voogds Rivier 37. The stone/rocks to be processed is screened by Mr Malherbe from the existing fields of Portion 3, 19 and 20 of Klaas Voogds Rivier 37 in order to increase the agricultural potential of the fields and allow for crop production.

The rock will be transported to the proposed 4.9 ha processing area upon which CP Concrete will crush, screen and stockpile the aggregate until it is used or sold to clients. CP Concrete intends to use the processed material at its existing ready mix plant on the property. Excess material will be sold to clients.

The proposed activity will not require any blasting and no undisturbed areas needs to be opened as all crushing, screening of rock and stockpiling will take place on areas previously opened for agricultural activities. No permanent infrastructure will be established. A mobile crushing and screening plant will be established on the processing area. A chemical toilet will serve as ablution facility to the employees on site and will regularly be serviced by a recognized contractor. No workers will reside on the processing area but will daily be transported to site.

The proposed processing project will be of small scale as:

- ✚ one excavator will be used to feed the rock into the crusher plant,
- ✚ the operation will require the presence of approximately five employees,
- ✚ temporary infrastructure (mobile crusher and chemical toilet) is proposed to be sufficient to supply in the need of the project,
- ✚ the rock to be crushed is screened from existing fields and no natural area needs to be opened/mined.

See attached as Appendix B a copy of the plan and schematic indication of the proposed processing activities.

(i) **Listed and specified activities**

<b>NAME OF THE ACTIVITY (All activities including activities not listed) (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.)</b>	<b>Aerial extent of the Activity Ha or m<sup>2</sup></b>	<b>LISTED ACTIVITY Mark with an X where applicable or affected</b>	<b>APPLICABLE LISTING NOTICE (GNR 554, GNR 545 or GNR 546)/NOT LISTED</b>
Demarcation of site with visible beacons	4.9 ha	N/A	Not Listed
Establishment of mobile crusher and ablution infrastructure within boundaries of site	18 m <sup>2</sup>	N/A	Not Listed
Stripping and stockpiling of topsoil of the processing area	4.9 ha	X	GNR 983 Listing Notice 1 Activity 28
Crushing and screening of stockpiled rock/stone	4.9 ha	X	GNR 983 Listing Notice 1 Activity 21, 28 GNR 984 Listing Notice 2 Activity 21
Stockpiling of aggregate	4.9 ha	X	GNR 983 Listing Notice 1 Activity 21, 28
Loading and transportation of material to clients	4.9 ha	X	GNR 983 Listing Notice 1 Activity 21, 28
Sloping and landscaping upon closure of the site	4.9 ha	X	GNR 983 Listing Notice 1 Activity 22

**(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)

The applicant, CP Concrete (Pty) Ltd, intends to crush and screen stockpiled stone/rock on a 4.9 ha area on Portion 3 of the farm Klaas Voogds Rivier 37.

The GPS coordinates for the proposed site are:

- A. 33°47'51.551"S 20°0'59.173"E
- B. 33°47'53.351"S 20°1'03.493"E
- C. 33°48'02.38"S 20°0'57.442"E
- D. 33°48'00.18"S 20°0'50.933"E

*(See Appendix A for Regulation 2.2 Mine Map)*

The proposed processing activity triggers the following listed activities in terms of NEMA and the EIA Regulations, 2014:

 GNR 983 Listing Notice 1:

- Activity 21: the project requires a mining permit in terms of the MPRDA,
- Activity 22: upon closure of the site a closure permit in terms of the MPRDA will be required,
- Activity 28: upon approval the site, that was previously used for agricultural purposes, will temporarily be used as a commercial area.

 GNR 984 Listing Notice 2:

- Activity 21: the project involves the crushing and screening of the stockpiled rock/stone on the farm.



**Site Establishment / Construction phase:**

During the site establishment phase the applicant, have to demarcate the boundaries of the site and clear the topsoil of the proposed processing area.

Topsoil stripping will be restricted to the area to be disturbed by the processing activity. The top 500 mm of soil will be removed. Upon stripping, the topsoil will be stockpiled along the boundary of the site in the form of a berm where it will not be driven over, contaminated, flooded or moved until used during the rehabilitation phase. The topsoil berm will measure a maximum of 1.5 m high and must be planted with indigenous grass species if vegetation does not naturally establish within 6 months of stockpiling to prevent soil erosion and to discourage growth of weeds. The roots of the grass will also improve the viability of the soil for rehabilitation purposes.

The applicant will introduce the processing equipment to the area during the site establishment phase.

The equipment to be used on site will entail the following:

-  Mobile crusher and screening plant
-  Chemical Toilet

- ✚ Excavator
- ✚ Trucks for the transport of the aggregate

### **Operational phase:**

The proposed activity will entail crushing and screening of the stockpiled rock/stone on the property.

The proposed activity entails the following:

1. Feeding of stockpiled rock/stone, screened from the existing fields of the landowner, by excavator into the crushing and screening plant where it is processed,
2. Upon processing the end product is stockpiled,
3. The applicant will then transport the stockpiled material to the on-site ready-mix plant, or alternatively sell it to clients and transport it from site using the existing roads.

The processing activities will therefore entail:

- ✚ Crushing and screening of stockpiled rock/stone
- ✚ Loading and transportation of material to ready-mix plant/clients

CP Concrete propose to use the aggregate, from the processing area, at its own ready-mix plant situated  $\pm 1$  km from the site. The amount of aggregate to be sold and transported from site is therefore deemed to be very low, and will mainly constitute over- or under size aggregate. The operation will require the presence of approximately five employees and the applicant will limit the processing of the rock to daylight hours.

The proposed production of aggregate on the property will reduce the amount of trucks delivering aggregate, from outside sources, to the ready-mix plant by approximately 100 trucks per month. This will have a direct positive impact on the traffic volumes of the surrounding roads. As most of the aggregate is proposed to be used in the ready mix plant the amount of rock to be sold to clients, and transported from site, is estimated to comprise approximately two trucks per month. Should aggregate be transported from site to clients the trucks will make use of the minor gravel road passing the processing area until it connects to the Klaasvoogds (East) road that leads up to the R60 tar road.

The crusher plant will be fitted with water sprayers to alleviate dust generation from the conveyor belts. Water will also be used on the access roads should dust levels increase due to additional traffic. The process water, needed during the operational phase, will be obtained from the existing water sources of the landowner (to be agreed upon by the applicant and landowner). A recognized contractor will service the chemical toilet that will serve as ablution facility to the employees.

The proposed activity will not require any blasting and no undisturbed areas needs to be opened/mined as the landowner screens the waste rock from existing fields. The site assessment identified the existing field, earmarked for the proposed activity, as the best option due to the fact that no natural vegetation need to be disturbed.



No workshop or service area will be established as the existing infrastructure on the farm can be used when needed. Due to the nature of the project, no large quantities of fuel will be stored on the site as fueling of the excavator will be done from a diesel bowser and the use of drip trays will be compulsory.

### **Decommissioning phase:**

The closure objectives entail the landscaping and replacement of the topsoil over the processing area in order to rehabilitate the disturbance. The following guidelines are proposed with regard to rehabilitation of the processing area:

- ✚ Upon closure of the site all infrastructure and stockpiled material must be removed,
- ✚ To ensure minimum impact on drainage, it is important that no depressions be left on the footprint area. A surface slope (even if minimal) must be maintained across the processing floor in the drainage direction, so that it will be free draining,
- ✚ The stockpiled topsoil must then be evenly spread over the entire disturbed area to a depth of 500 mm. The depth must be monitored during spreading to ensure that coverage is adequate and even.
- ✚ Topsoil spreading may only be done 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 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.
- ✚ A cover crop must be planted and established immediately after spreading of topsoil to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. It is important that rehabilitation be taken up to the point of crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established.
- ✚ The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs.
- ✚ On-going alien vegetation control must keep the area free of alien vegetation after mining.

Control of weeds and alien 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 management plan during the 12 months aftercare period to address germination of problem plants in the area.

The future land use of the proposed area will be agriculture. Upon the replacement of the topsoil, the area will once again be used as a field and the planting of the cover crop (to protect the topsoil) will tie in with the farming activities of the landowner.

## e) Policy and Legislative Context

<b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b>  (A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);	<b>REFERENCE WHERE APPLIED</b>  (i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)	<b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT</b>  (E.g in terms of the National Water Act: Water use license has/has not been applied for).
Mineral and Petroleum Resources Development Act, 2002, (Act No. 28 of 2002) Section 27	Part A (d) Description of the scope of the proposed overall activity.	Application for a mining permit Ref No: WC30/5/1/3/2/10100MP
National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 GNR 983 Listing Notice 1 Activity 21 GNR 983 Listing Notice 1 Activity 22 GNR 983 Listing Notice 1 Activity 28 GNR 984 Listing Notice 2 Activity 21	Part A (d) (i) Listing and specified activities.	Application for environmental authorisation Ref No: WC30/5/1/3/2/10100MP
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) and amendments	Part A(iv)(1)(a) Type of environment affected by the proposed activity - Biological Environment	Should Site Alternative 1 be approved and the proposed mitigation measures be implemented no aspects of the project could be identified that triggers the NEM:BA.
National Water Act, 1998 (Act No. 36 of 1998)	Part A(iv)(1)(a) Type of environment affected by the proposed activity – Surface- and Groundwater	The proposed activity does not trigger the NWA, 1998. However, the applicant must ensure adherence to all sections and regulations of the NWA, 1998 throughout the lifespan of the activity.
Mine Health and Safety Act, 1996 (Act No 29 of 1996)	The mitigation measures proposed for the site includes specifications of the MHSA  (Part A (iv) (1) (viii) The possible mitigation measures that could be applied on the level of risk.)	The mitigation measures proposed for the site includes specifications of the MHSA.
National Heritage Resources Act No 25 of 1999.	Part A(iv)(1)(a) Type of environment affected by the proposed activity – Human Environment	No aspects of the project could be identified that triggers the NHRA.

Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	Part A (iv) (1) (viii) The possible mitigation measures that could be applied on the level of risk – Management of weed- or invader plants.	All alien invader plants on site need to be controlled in terms of CARA. This was included in the mitigation measures proposed for the site.
Western Cape Land Use Planning Act, 2014 (Act No. 3 of 2014)	Part A(iv)(1)(b) Description of the current land uses	The applicant will submit an application for temporary departure from the zoning provisions in terms of the Land Use Planning Act 3/2014 and the Langeberg Municipal Land Use Bylaws 264/2015 prior to commencement of the proposed activities.
Langeberg Municipality: Land Use Planning Bylaws, 2015 (No 264 of 2015)		
Langeberg Municipal Spatial Development Framework		
Western Cape Provincial Spatial Development Framework		
Public Participation Guideline in terms of the NEMA EIA Regulations	Part A(ii) Details of the Public Participation Process Followed	Public participation was conducted in accordance with the guidelines published in terms of the NEMA EIA Regulations.

**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).

Mr Malherbe (landowner of Portion 3, 19 and 20 of Klaas Voogds Rivier 37) produce export fruit and vegetables on the fields of the above mentioned properties. In preparation of the fields numerous rocks are screened from the sand in order to increase the agricultural potential and allow for efficient crop production. CP Concrete identified the waste rocks/stones screened from the fields as a potential source that can be used in the ready mix plant that is also operational on the farm.

Using the waste rock/stone from the property in the ready-mix plant will not only reduce input costs, but also reduce the amount of aggregate to be delivered to site, directly affecting heavy traffic volumes on the surrounding access roads. CP Concrete further identified a need for aggregate in the surrounding area due to an increase in building and infrastructure development activities.

In the light of the above, the applicant has applied for a mining permit to commercially source the rock/stone currently discarded as waste. The processing of the waste rock/stone from the property will enable the landowner to effectively remove unwanted stockpiled rock from the perimeter of his existing fields as well as diversify the income generating activities on the property.

**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.

The initial site layout entailed the use of a 4.9 ha area for the crushing and screening of waste rock within the boundaries of the proposed GPS coordinates. As no permanent infrastructure will be established, the production rate and subsequent stockpiling of aggregate will dictate the layout of the proposed footprint area.

During the environmental impact assessment, the following additional matters were considered in order to identify the preferred development footprint:

1. **CapeNature (CN)** - Upon review of the DSR and DEIAR & EMPR CN commented that they do not object to Alternative 1 provided that appropriate buffers are implemented. CN proposed a minimum buffer of 30 m between any mining/processing activities and watercourses and wetlands, and a minimum buffer of at least 20 m between any mining/processing activities and natural vegetation. CN further stipulated that no cleared vegetation, alien species or other, may be dumped in areas containing indigenous vegetation.
2. **Breede Gouritz Catchment Management Area (BGCMA)** - Upon review of the DEIAR & EMPR BGCMA commented that the activities do not occur within the extent of a water course and are therefore not regarded as Water Use in terms of Section 21(c) & (i) of the National Water Act, 1998. No water use authorisation is therefore required.
3. **Mr. Papesch** – The project team considered the comments received from Mr. Papesch while assessing the layout of the processing activities. The following was taken into consideration:
  - ✚ Visual Impact – The height of the stockpiles will be limited to 3 m to manage the visual impact and it is proposed that the orchard to the east of the proposed site will assist in screening the activities.
  - ✚ Restriction of activities to specific periods during the year and day – The applicant will limit all processing activities to daylight hours, and no crushing or screening will be done on Sundays to minimize the noise impact on the surrounding environment. The request to restrict processing activities to specific periods during the year was found to be impractical as the ready-mix plant is operational throughout the year and therefore needs aggregate at all times.
  - ✚ Transport of stone limited to the Ashton gravel road – The suggestion that the transport of the stone be limited to the Ashton gravel road is not a viable option. Apart from this road being a detour, it is believed that the Ashton road will not be able to handle the additional traffic especially with regard to an increase in heavy vehicles.

- ✚ Dust – Fallout dust monitoring must be implemented in order to ensure compliance of the site with the fallout dust standards from the National Dust Control Regulations, 2013.
- ✚ Noise – Should the permit holder receive complaints with regard to boundary noise a noise impact study has to be conducted by a qualified specialist.

**4. Agriculture** – The Department of Agriculture objected to the use of previously cultivated land for the proposed processing activity. It was explained that the topsoil will be stripped and stockpiled and no bedrock will be disturbed on the proposed site. The end use of the area, as specified in the closure plan, is to ensure that the site reverts back to agricultural use.

In light of the above mentioned the processing proposal was updated to incorporate the matters raised during the assessment process. The site activities plan (Appendix B) was also updated to depict the conditions and requirements stipulated above.

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

With reference to the site plan provided as Appendix 4 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.

The applicant, CP Concrete (Pty) Ltd, intends to crush and screen stockpiled stone/rock on a 4.9 ha area on Portion 3 of the farm Klaas Voogds Rivier 37. The stone/rocks to be processed is screened by Mr. Malherbe from the existing fields of Portion 3, 19 and 20 of Klaas Voogds Rivier 37 in order to increase the agricultural potential of the fields and allow for crop production.

The applicant identified two alternative sites for the proposed processing activity namely:

**Site Alternative 1 (S1) (Preferred Alternative):**

Site Alternative 1 entails the use of an area previously transformed by agricultural activities (existing field) as footprint area for the processing of the rock/stone within the boundaries of the following GPS coordinates:

<b>SITE ALTERNATIVE 1 (PREFERRED ALTERNATIVE)</b>		
<b>NO</b>	<b>LATITUDE (SOUTH)</b>	<b>LONGITUDE (EAST)</b>
A	33° 47'51.551" S	20°0'59,173"E
B	33°47'53,351"S	20°1'03,493"E

C	33°48'02,38"S	20°0'57,442"E
D	33°48'00,18"S	20°0'50,933"E

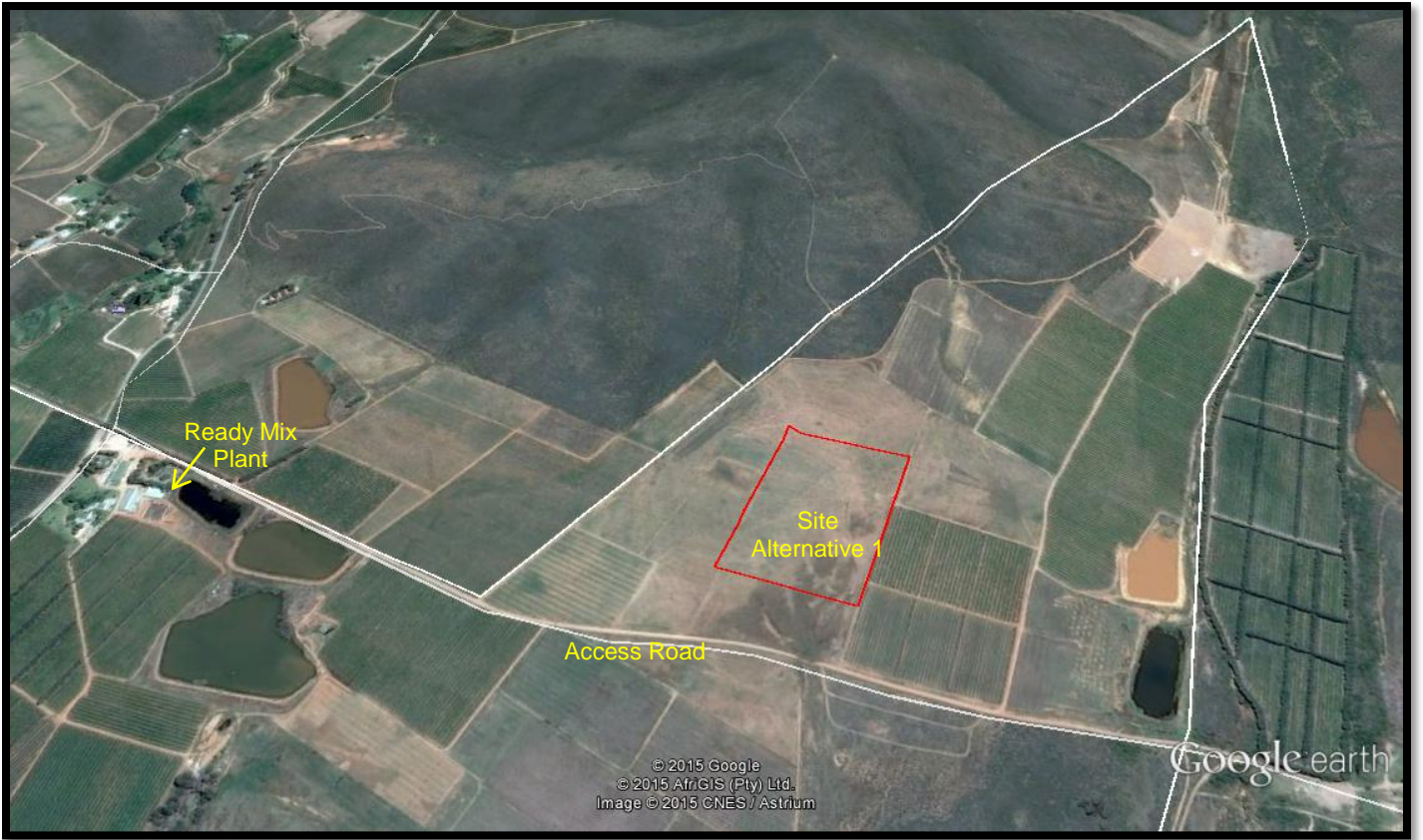


Figure 1: Satellite view indicating the position of Site Alternative 1 (Red Block) in relation to the Ready Mix Plant and Access Road.

Site Alternative 1 was identified during the assessment phase of the environmental impact assessment, by the applicant and project team, and was selected as the preferred alternative due to the following (positive) reasons:

- ✚ The area earmarked for the processing activities was previously used for agricultural purposes and no natural area needs to be disturbed,
- ✚ The proposed area is situated adjacent to an existing farm road that links up with minor roads (road 6035 and 6036) traversing the property. No new roads need to be established to reach the proposed processing area.
- ✚ The proposed processing area falls only on Portion 3 of the farm Klaas Voogds Rivier 37.

Negative aspects associated with Site alternative 1 entails:

- ✚ The processing area will be lost to agricultural production for the duration of the mining permit.
  - The applicant and the landowner has a land use agreement. Upon laps of the mining permit, the area will revert to agricultural use.

Should the mitigation measures and monitoring programs 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.

**Site Alternative 2 (S2):**

Site Alternative 2 entails the use of an area that falls onto Portion 3 and 19 of the farm Klaas Voogds Rivier 37 within the boundaries of the following GPS coordinates:

SITE ALTERNATIVE 2		
NO	LATITUDE (SOUTH)	LONGITUDE (EAST)
A	33° 48'09.11" S	20°1'14.10"E
B	33°48'07.76"S	20°1'04.50"E
C	33°48'14.82"S	20°1'10.54"E
D	33°48'13.25"S	20°1'00.86"E

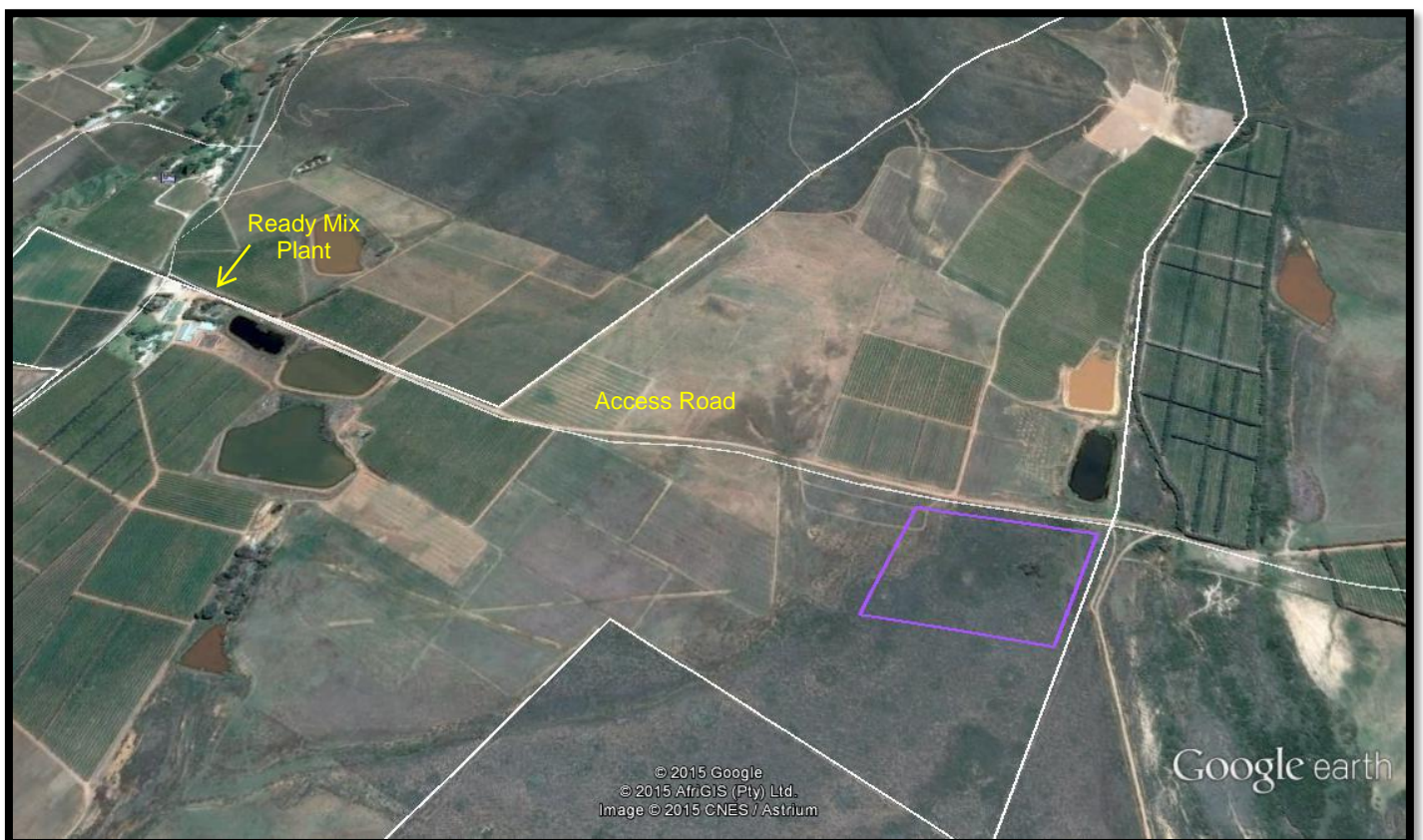


Figure 2: Satellite view indicating the position of Site Alternative 2 (Purple Block) in relation to the Ready Mix Plant and Access Road

The applicant investigated the possibility of establishing the proposed processing area at the lower corner of Portion 3 of the farm Klaas Voogds Rivier 37 in an unused area of the farm. This alternative was however found not to be the preferred alternative due to the following (negative) reasons:

- ✚ Although a 4.9 ha area could be established on this section of the farm it will entail the disturbance of an area that rehabilitated, through succession, back to Breede Shale Renosterveld. Opening the area to establish the processing site would therefore have a highly negative impact on the natural vegetation of the surrounding area.
- ✚ In order to fit the proposed area below the road, the area extends over Portion 3 and onto Portion 19 of the farms Klaas Voogds Rivier 37. The landowner would prefer the processing area to only be on one of his properties in order to adhere to the conditions of the Mine Health and Safety Act, 1996 (Act No 29 of 1996) and the Regulations that stipulates a mining area must be further than 100 m from the boundary of a property.

In the light of the above and the review of the potential impacts associated with S1, site alternative 2 is deemed **not to be the preferred option** as the impacts associated with this alternative is believed to have a higher ecological significance without the need or motivation justifying it.

#### **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. The rock to be crushed and screened on site will either be used at the applicant's ready-mix plant or be sold to clients in the area. If however the no-go alternative is implemented the applicant will not be able to utilize the rock screened as waste product from the fields.

The no-go alternative was not deemed to be the preferred alternative as:

- ✚ The applicant will not be able to use the waste rock of the farm in the read-mix plant. This will necessitate aggregate to be delivered, from another commercial source, to the ready-mix plant as done currently.
- ✚ This project has the potential to decrease the amount of heavy trucks driving on the public roads, as less aggregate will have to be delivered to the site, should the rock on the farm be used. If the no-go option is however followed the status quo will be maintained and no change to the traffic volumes will occur.
- ✚ The landowner will not be able to diversify the income of the property.
- ✚ The applicant will also not be able to supply in the demand of building contractors in the area.



## 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 I&AP comment/notification letters that were either delivered by hand or sent directly to the contact persons. A 30 days commenting period were allowed which extended to the 7<sup>th</sup> of September 2015. During this period it was still anticipated that an EIA for the screening of the rocks from the fields will be handled by DEA&DP and the mining permit for the processing of the rocks will be handled by DMR, and therefore two separate letters were distributed inviting stakeholders and I&AP's to comment. The following I&AP's and stakeholders were informed of the project:

SURROUNDING LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
<ul style="list-style-type: none"> <li>✚ Altus Malherbe Familie Trust</li> <li>✚ Kranskop Wyne (Pty) Ltd (Mr N Marais)</li> <li>✚ Mr HN Bruwer</li> <li>✚ Mr S Bruwer</li> <li>✚ Mr B Grove</li> <li>✚ Mr G Joubert</li> <li>✚ Mr M Marson</li> <li>✚ Mr VU Papesch</li> <li>✚ Mr LA van Zyl</li> </ul>	<ul style="list-style-type: none"> <li>✚ Breede Gouritz Catchment Management Agency</li> <li>✚ CapeNature</li> <li>✚ Cape Winelands District Municipality</li> <li>✚ Department of Agriculture</li> <li>✚ Department of Environmental Affairs and Development Planning</li> <li>✚ Department of Labour</li> <li>✚ Department of Land Affairs</li> <li>✚ Department of Mineral Resources</li> <li>✚ Department of Social Development</li> <li>✚ Department of Transport and Public Works</li> <li>✚ Heritage Western Cape</li> <li>✚ Langeberg Local Municipality</li> <li>✚ Ward Councillor of Ward 4 of Langeberg Local Municipality</li> </ul>
<b>I&amp;AP'S AND STAKEHOLDERS THAT REGISTERED DURING THE PUBLIC PARTICIPATION PERIOD</b>	
<ul style="list-style-type: none"> <li>✚ Breede Gouritz Catchment Management Agency</li> <li>✚ CapeNature</li> <li>✚ Department of Agriculture</li> <li>✚ Department of Environmental Affairs and Development Planning</li> <li>✚ Department of Social Development</li> <li>✚ Department of Transport and Public Works</li> <li>✚ Mr VU Papesch</li> <li>✚ Langeberg Local Municipality</li> </ul>	

Two advertisements were placed in the Breederivier Gazette on the 18<sup>th</sup> of August 2015 and on-site notices were placed on the 14<sup>th</sup> of August 2015 at the turn-off to the farm and the entrance to Robertson Take Aways & Fisheries.

Upon submission of the Notice of Intent to the Department of Environmental Affairs and Development Planning (DEA&DP) response was received that the application should be handled by DMR as DEA&DP is not the competent authority. DMR confirmed that they will be the competent authority for the project and that a Mining Permit application with Full EIA needs to be submitted to obtain the necessary approval for the proposed activity. Following this confirmation the mining permit application was submitted to DMR on the 14<sup>th</sup> of January 2016 and the project received WC30/5/1/3/2/10100MP as reference number.

The Draft Scoping Report (DSR) was subsequently compiled and distributed to all the registered I&AP's and stakeholders listed above. The I&AP's and stakeholders that did not register during the initial public participation phase were notified, by means of a letter, that the DSR is available for their perusal should they be interested. A 30 days commenting period, ending on the 19<sup>th</sup> of February 2016, was allowed for perusal of the documentation and submission of comments. The comments received during this period was added to the Final Scoping Report submitted to DMR for approval. The Final Scoping Report was approved by DMR on the 8<sup>th</sup> of April 2016 and permission was received to proceed with the environmental impact assessment process.

The Draft EIA report was then compiled and distributed to the registered I&AP's and stakeholders for their perusal over a 30 days commenting period (19 May – 20 June 2016). The comments received on the Draft EIA report was incorporated into this report, the Final EIA report, to be submitted for decision making to DMR.

The comments and response report with proof of the public participation process followed throughout the impact assessment process is attached as Appendix F.

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

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

Interested and Affected Parties		Date Comments Received	Issues Raised	EAP's response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.					
<b>AFFECTED PARTIES</b>					
Landowner/s					
Altus Malherbe Familie Trust	X		Mr. Malherbe signed a landowner consent that allows CP Concrete to operate the proposed processing area on the property. See attached under Appendix 5.	Greenmined and the applicant is in continuous discussions with the landowner.	See Appendix E for a copy of the landowner consent
<b>Lawful occupiers/s of the land</b>					
The landowner is the only lawful occupant of the land.					
<b>Landowners or lawful occupiers on adjacent properties</b>		X			
Surrounding landowners: <ul style="list-style-type: none"> <li>✚ Mr. HN Bruwer</li> <li>✚ Mr. S Bruwer</li> <li>✚ Mr. B Grove</li> <li>✚ Mr. G Joubert</li> <li>✚ Mr. M Marson</li> <li>✚ Mr. LA van Zyl</li> <li>✚ Mr. N Marais (Kranskop Wyne (Pty Ltd)</li> </ul>		X	No comments received		

Mr. VU Papesch	X	1 September 2015	<p>Mr. Papesch submitted the following comments:</p> <ul style="list-style-type: none"> <li>✚ The focus of Mr. Papesch's cooperation is the running of a top rated restaurant and wine cellar.</li> <li>✚ Fraai Uitzicht follows the international trend in the tourism industry in offering a unique product in the area and would like to keep the nature with the indigenous Karoo flora intact.</li> <li>✚ The mentioned activities might have significant impact on the income of the farm as well as the value of the property.</li> <li>✚ The following concerns were listed: <ol style="list-style-type: none"> <li>1. Where is the precise position of the screening area,</li> <li>2. Visibility of the stockpiled area.</li> <li>3. Screening for at least 20 years – activity should be limited to a shorter period.</li> <li>4. Priced description of what should be mined and if the activities are limited to these only.</li> <li>5. What are the anticipated volumes and impact in depth to ground?</li> <li>6. Can activities be restricted for specific periods during the year and day?</li> <li>7. Is a rezoning of the farm necessary?</li> <li>8. Are the mining activities limited on the 4.9 ha plot?</li> <li>9. What are the relevant reasons for an extension of the mining permit and how does it work?</li> <li>10. Can the transport of the stones be limited to the gravel road to Ashton if stones are sold to projects, which locations are in shorter distances via this road?</li> <li>11. What does “no quarry pit with high walls...” mean precisely?</li> <li>12. Who will be the Regional Manager?</li> <li>13. What happens in case of a property sale? Is the allowance linked to the property or the applicant?</li> </ol> </li> </ul>	<p>The following response is offered to address Mr. Papesch concerns:</p> <ol style="list-style-type: none"> <li>1. Kindly refer to the description of Site Alternative 1 under heading <i>h) (i) Details of all alternatives considered</i> in the Scoping Report.</li> <li>2. The footprint of the proposed processing area will be visible from the minor road passing the site as well as the higher laying areas to the north of the site. No permanent infrastructure will be established on site that could permanently increase the visual impact. The height of the stockpiles will be controlled to manage the visual impact and it is proposed that the orchard to the east of the proposed site will assist in screening the activities.</li> <li>3. A mining permit can only be valid for a maximum of seven year and the proposed operational phase is thus shortened to seven years.</li> <li>4. The applicant intends to process the waste rock/stones of the property. The activities authorized in this application will be binding to the applicant.</li> <li>5. The anticipated volume of rock to be processed at the area is ±10 000 ton/quarter. The proposed project will not have an impact on the depth to the ground, as no rock will be quarried. The project only entails the processing of waste rock removed during field preparation.</li> <li>6. The option could be further investigated during the Environmental Impact Assessment Process.</li> <li>7. An application for temporary departure from the zoning provisions will be</li> </ol>	<p>Part A (d)(ii) Description of the activities to be undertaken</p> <p>Part A (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.</p> <p>Part A (i) Details of the development footprint alternatives considered</p>
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				<p>submitted to the Local Municipality prior to commencement of the activity.</p> <p>8. The mining activities will be limited to the 4.9 ha area yes.</p> <p>9. Upon laps of the initial three years of a mining permit, DMR allows the applicant to apply for and extension of the permit should it be deemed that the mineral could still be optimally utilized. The applicant has to submit an application for renewal of the mining permit to DMR for approval.</p> <p>10. The option could be further investigated during the Environmental Impact Assessment Process.</p> <p>11. No rock/stone will be quarried from the property, as only waste rock will be used. The proposed project will therefore not create a “traditional mine” with high visual impacts.</p> <p>12. The Regional Manager of the Department of Mineral and Resources.</p> <p>13. The mining permit is linked to the applicant, which in this case is CP Concrete, and not the property. Should the property be sold the presence of a permitted processing area on the property will have to be included in the transfer documentations.</p>	
		22 February 2016	<p>A letter from Mr. Papesch was received, by post, on the 22<sup>rd</sup> of February 2016 stating that he received the DSR only at the end of January 2016. He further stated that the DSR could not be opened from the CD that was supplied. He requested another CD and hard copy of the document, and extension on the commenting period to submit his comments.</p>	<p>Mr. Papesch called Ms. Fouche (Greenmined) on the 28<sup>th</sup> of January 2016 to confirm that he received the DSR and to enquire what the way forward entails. Ms. Fouche explained the commenting period and EIA process to Mr. Papesch and invited him to submit his comments on the report. Mr. Papesch did not mention that he could not access the document on the CD. He also never phoned back, after this call, to</p>	

				<p>inform Greenmined that he cannot access the documents.</p> <p>Greenmined telephonically explained to Mr. Papesch that the Final Scoping Report must be submitted to DMR by the 27<sup>th</sup> of February 2016 and therefore unfortunately no extension of the commenting time can be accommodated. He was however supplied with a hard copy of the DSR and invited to submit any comments he would like to add to the report. Mr. Papesch's comments will be added to the Draft EIA report should the FSR be approved by DMR.</p> <p>At the time of the drafting of the DEIAR, no additional comments were received from Mr. Papesch.</p> <p>A hard copy of the Draft EIA report was sent to Mr. Papesch and the registered I&amp;AP's and stakeholders for a 30 days commenting period.</p>	
		22 February 2016	<p>Mr Papesch commented that after perusal of the DEIAR &amp; EMPR he is concerned that his objections were not adequately presented in the report. He pointed out that Fraai Uitzicht 1798 has not just a restaurant and a wine cellar, but probably the most well-known guest house in the Robertson Valley. They have national and mainly international guests staying with them as well as contracts with international tour operators. Fraai Uitzicht 1798 is for all of them a synonym of a tranquil place in the Western Cape. According to Mr Papesch the noise pollution is becoming a more and more important issue. Mr Papesch further states that at a place where one want to relax and enjoy nature you would not expect noise, dust and visual impact from mining activities. The main concern is that Fraai Uitzicht 1798 would face a</p>	<p>Greenmined acknowledged and responded to Mr. Papesch's comments on the 28<sup>th</sup> of June 2016. The comments received from Mr. Papesch were added to the Final EIAR &amp; EMPR to be submitted to DMR for their decision making.</p> <p>Greenmined further mentioned that Mr. Malherbe confirmed on the 23<sup>rd</sup> of June 2016 that he met with Mr. Papesch in order to discuss the proposed project and associated impacts that may have a potential negative impact on Fraai Uitzicht 1798. According to Mr. Malherbe, the outcome of the meeting was that the two parties is in the process of sorting the</p>	<p>Appendix F – Proof of Public Participation Process.</p> <p>Part A (q) Period for which the Environmental Authrosation is required.</p> <p>Appendix I – Financial and Technical Competence.</p> <p>Part A (g) Motivation for the preferred</p>

		<p>negative impact with regard to income as well as the value of the business as a result of the proposed mining activities.</p> <p>Mr Papesch also raised the following points on which he requested clarity:</p> <ul style="list-style-type: none"> <li>+ The document from the Langeberg Local Municipality dated 22.02.2016 could not be found in the DEIAR &amp; EMPR;</li> <li>+ According to his understanding the mining permission will be for 7 years,</li> <li>+ According to his understanding the expected volume is 80 000 tons in two years;</li> <li>+ The trees on the west side of the crushing zone does not exist.</li> </ul>	<p>concerns, raised in the comments on the DEIAR &amp; EMPR, internally and that no additional meeting or intervention from Greenmined was presently required. Mr. Papesch was asked to respond to the correspondence should he feel a meeting was still required.</p> <p>The matters on which Mr. Papech requested clarity were also elaborated on as listed below:</p> <ul style="list-style-type: none"> <li>+ The last response from Langeberg Local Municipality was received on 19 February 2016. This response was attached on page 142 of the Proof of Public Participation document with Greenmined's response to the comment added to page 143 of the document. Also see the comment attached to this e-mail for your convenience.</li> <li>+ An approved mining permit is valid for 3 years upon which it can be renewed twice for a maximum period of two years each. Should the renewals be approved by DMR the maximum validity period will therefore amount to 7 years.</li> <li>+ That is correct. The anticipated production rate is approximately 10 000 ton/quarter.</li> <li>+ Thank you for pointing that out, the document were supposed to refer to the orchard to the east of the proposed site. We apologise for the error and will rectify it in the FEIAR.</li> </ul>	<p>development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site</p>
	3 July 2016	<p>Mr Papesch confirmed the meeting held between himself and Mr Malherbe, and that they discussed initial ideas with regard to an alternative position for the concrete plant. However nothing has been finalised. Mr Papesch requested</p>	<p>A consultation meeting was held with Mr. Papesch (20 July 2016) to clarify his concerns with the project. Please see</p>	<p>Part A (iv) (1) (viii) The possible mitigation measures that could be applied</p>

			<p>that a meeting be arranged towards the end of the school holidays or the beginning of the next school term as he was unavailable for most of the holidays.</p>	<p>Appendix F for a full copy of the minutes of the meeting.</p> <p>Mr. Papesch raised the following concerns in relation to the application:</p> <ul style="list-style-type: none"> <li>✚ The position of the existing operational ready mix concrete plant; <i>Greenmined explained that any issues surrounding the ready mix concrete plant are separate to the application and that the current public participation process is aimed at addressing concerns relating to the proposed mining site. Greenmined understands the applicant and Mr Papesch are currently in discussions as to how the ready mix concrete plant can be relocated to a different area and that any relocation issues need to be resolved internally.</i></li> <li>✚ The location of the proposed mining area in relation to the guesthouse; <i>Location was clarified by means of a Google image. Mr. Papesch explained that this distance does not mean that the proposed activities will not be visible to guests by reason of the fact that guests may decide to take a walk along the mountain side. Greenmined explained that the rock that the applicant is applying to crush is (and has for some time) already being screened from the fields of the landowner. In this circumstance, the additional visual impact will be the temporary infrastructure (mobile crusher) and stockpiles of crushed rock. It was further explained that the visual impact of the stockpiles could be controlled by limiting the amount and height of the stockpiles.</i></li> </ul>	<p>on the level of risk – Visual Mitigation</p> <p>Part (A) (u) (i) (1) Impact on the socio-economic conditions of any directly affected person</p> <p>Part A (iv) (1) (viii) The possible mitigation measures that could be applied on the level of risk – Dust Handling</p> <p>Part A (iv) (1) (viii) The possible mitigation measures that could be applied on the level of risk – Noise Handling</p>
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				<p>✚ The maximum duration of the permit;  <i>Greenmined explained that the maximum duration of the mining permit is 7 years. It was further explained that in terms of the current legislation (specifically regulation 34 of the NEMA 2014 regulations) the site is required to have an annual environmental audit. Notice of this annual report must be given to registered I &amp; AP's who will then have an opportunity to request and peruse the report. The I&amp;AP can submit reasons/comments to DMR. DMR will then use all information before it when deciding whether to renew the permit and/or whether compliance inspections are required</i></p> <p>✚ The operating hours of the proposed site;  <i>Greenmined explained that the site will operate Monday to Saturday and only during normal daylight working hours</i></p> <p>✚ The procedure and consequences should the applicant decide to sell its business;  <i>Greenmined explained that the EA is clear on the point that any subsequent permit holder is obliged to adhere to all conditions stipulated in the EA and EMPR. In an attempt to safeguard Mr. Papesch's interest and address his concerns it was suggested that should they feel additional conditions needs to be added to the EMPR, they highlight them for consideration.</i></p> <p>✚ The negative impact the proposed site will have on his income and value of his business;  <i>Greenmined highlighted that this concern is not determinable at this stage as numerous factors may affect the value of a property. It</i></p>	
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				<p><i>is however strongly believed that the processing of rock on the 4.9 ha area at its proposed position will not have an impact on the value of the neighbouring properties. Mr Malherbe further explained that he has spent a great deal of money to neaten up the farm and will not allow haphazard activities that will also deface his property.</i></p> <p>✚ Noise and dust generated by the proposed site;</p> <p><i>Greenmined explained that the conveyor belts on the crushers have water sprayers to control dust created by the operation of the crusher and that water will be sprayed on the roads to prevent the creation of dust by trucks loading the crushed material and transporting it. It was further noted that a dust management plan could be implemented on site to effectively control dust and ensure that dust monitoring is done.</i></p> <p><i>It is not expected that the traffic on the Klaasvoogds (East) road will increase significantly as the proposed project will lessen the amount of external trucks delivering material to the ready-mix plant and therefore trucks traveling on the Klaasvoogds (East) road will decrease should the application be approved. Collection of the aggregate by a third party will not be the general rule but rather the exception. Greenmined further explained that the crusher transmits a constant “humming” type sound which, when taking in consideration that surrounding farming activities are in operation, will likely be absorbed and disguised. For this reason the applicant will not operate at night and on Sundays when the area is quiet as noise</i></p>	
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				<p><i>levels will be more prevalent. In this regard Mr Malherbe offered to take Mr Papesch to a neighbouring farm where crushing is taking place and demonstrate that at a distance of even 200m from the crusher you can barely hear it if at all</i></p> <p>✚ Whether or not they will still be able to have a “say” in the operation of the site should the permit be granted.</p> <p><i>In terms of Regulation 34 (as attached to the minutes) the site is obliged to have a complaints register. A person who feels aggrieved by certain conduct of the site is then afforded the opportunity to lodge a complaint in the complaints register alternatively can also provide suggestions as to how to deal with a specific aspect on site in a more efficient and effective way. All grievances and/or suggestions entered into the complaints register has to from part of the annual environmental performance assessment report to be submitted to the DMR. Should the ECO (Environmental Control Officer) or DMR feel the EMPR does not effectively control the activity the document can be amended.</i></p> <p>The minutes of the meeting was circulated to the attendees. No additional comments or concerns were received.</p>	
<b>Municipal councilor</b>	X		No response received.		
<b>Municipality</b>	X	26 August 2015	<p>Langeberg Local Municipality responded with the following comments:</p> <ol style="list-style-type: none"> <li>1. An application for consolidation and re-subdivision of the Portions of Klaas Voogds Rivier is in process.</li> <li>2. The application site is zoned Agricultural Zone I in terms of the Section 8 Zoning Scheme Regulations. The</li> </ol>	<p>The following response is offered to the comments of the Langeberg Local Municipality:</p> <ol style="list-style-type: none"> <li>1. Should the property description of the proposed area change the changes will be communicated with DMR.</li> </ol>	Part A(iv)(1)(a) Type of environment affected by the proposed activity

			<p>proposed mining activities do not fall within the above definition and application must be made for a temporary departure from the zoning provisions. More detailed assessment must be given in relation to the apparent drainage area near the south and eastern boundaries of the 4.9 ha. Particularly with regard to storm water run-off and potential environmental impact and impact on the district road.</p> <p>3. Tributaries to the Klaas Voogds River occur across the site and comments from Cape Nature and BGCMA are important to mitigate against any potential impacts in this regards. Activities must remain at least 32 m from the watercourses to prevent triggering additional EIA listed activities.</p>	<p>2. The applicant takes note of the temporary departure that is needed and will apply for approval prior to commencement with the activities.</p> <p>3. These aspects will be further investigated during the Environmental Impact Assessment Process and fully described in the Environmental Impact Assessment Report and Environmental Management Programme. A copy of the Draft Report will be made available for public review.</p> <p>4. Cape Nature and BGCMA were informed of the project and their comments will be considered once received.</p>	
		16 February 2016	<p>Langeberg Local Municipality responded with the following comments on the DSR:</p> <p>1. Under the legislative Context, the land use legislation should be included: Land Use Planning Act 3/2014 and Langeberg Municipal Land Use Bylaws 264/2015; &amp; Provincial and Municipal SDFs.</p> <p>2. In response to our initial comments, you state that “<i>The applicant takes note of the temporary departure that is needed and will apply for approval prior to commencement with the activities</i>”. For clarity, please note that no activity may commence unless and until such time as approval is issued i.e. the lodging of an application for a particular land use right in itself will not grant the right to commence with the activity; nor is the positive outcome of such application a given. If time is an issue, then it may be worth considering lodging the LUPA departure application as soon as possible. An application of this nature takes on average 5-8 months from date of lodgement to date of decision.</p> <p>3. Under the heading Human Environment, “(b) Description of the current land uses”, further details are requested regarding the land use identified as “Light Industrial” – ready mix plant, operated by CP</p>	<p>The following response was sent to Langeberg Local Municipality on their comments:</p> <p>1. Comment noted and the listed legislation was added to the Final Scoping Report. See <i>Section 2(e) Policy and Legislative Context</i>.</p> <p>2. The proponent is aware of the approval that needs to be obtained for temporary departure, and that no work may commence prior to receipt of it. CP Concrete will again be informed of the timeframe associated with the application and advised to commence with the application process as soon as possible.</p> <p>3. The plant is of small scale and comprise of a Weight Bin into which the sand, cement (bagged cement – no silo necessary) and aggregate is fed by a Loader. From the Weight Bin the mix is fed via conveyor belt into the waiting Concrete Truck where it is mixed during transport to the client. Water is added</p>	Part A(iv)(1)(b) Description of the current land uses

			Concrete. What does this plant comprise of? Size? How long has it been in operation? etc.	directly into the Concrete Truck. The approximate output of the Ready Mix plant is ±1 000 – 1 500m <sup>3</sup> concrete / month. The activity has been operational for the last 7 – 8 years. The plant is situated on a concreted area at the back of the packing warehouses.	
		19 February 2016	Langeberg Local Municipality further commented that the ready-mix plant itself is not a primary use in the Agricultural Zone 1 and no records exist of an application for or approval of this land use. The planning consultant who lodges the application for the departure for the mining must also assess what application should be simultaneously made with regard to obtaining the approval for the plant.	Greenmined acknowledged this comment and has informed the project team that the land use zoning of the ready-mix plant should be included when the application in terms of LUPA is submitted to the municipality.	
<b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA, etc</b>	X				
Breede Gouritz Catchment Management Agency (BGCMA)	X	11 August 2015	The Breede Gouritz Catchment Management Agency registered as I&AP on the 11 <sup>th</sup> of August 2015	The BGCMA was added to the list of registered I&AP's and will be consulted throughout the EIA process.  Greenmined requested BGCMA to confirm whether any drainage lines pass through the proposed study site. During a telephonic discussion, Me. Rossouw suggested that the Klaas Voogds River Irrigation Board be contacted to get confirmation on the position of drainage lines.	
		Comments dated: 3 May 2016  Comments received 23 May 2016	BGCMA submitted the following comments on the project:  <i>(These comments were received after submission of the Draft EIAR for comments and could therefore not be included in the report. The comments were however added to the Final EIAR.)</i>	Greenmined responded on the 1 <sup>st</sup> of June 2016 that although the initial correspondence indicated that the activity will take place on the fields of Portions 3, 19 and 20 of the farm Klaas Voogds Rivier 37 and Portion 3 of the farm Marthinus Vlei 34, the applicant in the end only applied for a	Part A(e) Policy and Legislative Context  Part A (iv) (1) (viii) The possible mitigation measures that could be applied

			<ol style="list-style-type: none"> <li>1. All relevant sections and regulations of the NWA, 1998 regarding water use must be adhered to.</li> <li>2. No use of water and/or storage of water is permitted, unless the applicant has formally obtained a licence in terms of Section 41 of the NWA, 1998 and/or formal authorisation in terms of GA issued under Section 39 (GN 399, 2004) and/or if it is authorised under Schedule 1 of the NWA, 1998 and/or if it defined and declared as an existing lawful water use in terms of Section 32 &amp; 33 of the NWA, 1998.</li> <li>3. No pollution of surface water or ground water resources may occur due to any activity.</li> <li>4. No storm water runoff from any premises containing waste, or water containing waste emanating from industrial activities and premises may be discharged into a water resource. Polluted storm water must be contained.</li> <li>5. All relevant sections and regulations of the NEM:WA, 2008 regarding the disposal of solid waste must be adhered to. Solid waste may only be disposed of onto an authorised solid waste facility in terms of abovementioned legislation.</li> <li>6. No permanent structures maybe constructed within the 100 year flood line or within 100 m of any watercourse whichever is furthest.</li> <li>7. The water provided for domestic use / human consumption must comply with the SANS 241:2001 guidelines for drinking water. Regular monitoring must be done to ensure compliance. If the quality of the water is of such a nature that it is a threat to human health, then this office and the Provincial Department of Health must be informed of the procedures to rectify the problem.</li> <li>8. All requirement in the Regulations on use of water for mining and related activities aimed at the protection of water resources as contained in GN 704, 1999 published in terms of the NWA, 1998 must be adhered to at all times.</li> <li>9. Please be advised that a wetland is defined as a watercourse in terms of the NWA, 1998. Please be advised that no Section 21 (c) and (i) water use may</li> </ol>	<p>mining permit (4.9 ha) on Portion 3 of the farm Klaas Voogds Rivier 37, Robertson.</p> <p>The comments submitted by the Breede Gouritz Catchment Management Agency has been noted and the relevant comments have been incorporated as conditions into the Final Environmental Impact Assessment Report.</p>	<p>on the level of risk – Contamination of surface and groundwater &amp; Management of Health and Safety Risks</p>
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			<p>occur within a 500 m radius from the boundary of any wetland and within 100 m of any other watercourses without a Water Use Licence.</p> <ol style="list-style-type: none"> <li>10. The groundwater flow gradient across the intended mining site must be determined. Seasonal water tables, both winter and summer, must be measured. If it is envisaged that water found underground will have to be removed and discharged or disposed of at any time during the mining period for continuation of mining activities the removal and disposal must comply with the GA as stipulated in Schedule 3 of GN 398, 2004. If the removal and discharge will not comply with the requirements of this GA the applicant must submit a formal licence application in terms of Section 21(j) of the NWA, 1998 to this office.</li> <li>11. Should it be necessary to apply for an authorisation for any water use in terms of the NWA, 1998 please be informed that authorisation could only be issued once a positive EA has been obtained from the DEA&amp;DP for all application subject to an EIA.</li> <li>12. Mining particles must be prevented from entering the drainage furrows around the mining area, so that suspended solids will not enter any water resources.</li> <li>13. The suspended solids concentration of water leaving the property may not generally exceed 25mg/l. If the receiving watercourse is a special standard resource then a limit of 10mg/l may not be exceeded.</li> <li>14. Control measures must be implemented to prevent the pollution of any water resource, including groundwater, by oil grease fuel or chemicals.</li> <li>15. All production material must be stockpiled outside the 1:100 year flood-line or more than a horizontal distance of 100 m from any watercourse.</li> <li>16. If sewerage facilities for mine workers is necessary. A buffer are of a least 100 m or above the 1:100 year flood line from the edge of any watercourse whether permanent or non- permanent, must be applied when installing any type of sewerage disposal system.</li> <li>17. In the event that water from any water resource is needed in the mining processes, the applicant must apply for the necessary authorisation at this office.</li> </ol>		
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			<p>18. The water quality of the rivers draining where the mining is to take place may be negatively impacted on due to the mining operations.</p> <p>19. All undertakings in the proposed rehabilitation programme must be adhered to. Should there be for any reason, deviation from the rehabilitation programme, this office must be notified immediately.</p> <p>20. This intended use of any mine site/quarry as a storage dam for whatever use after the mining operations ceased, is illegal without first obtaining formal authorisation from this office for the storage of water in terms of Section 21(a) and (b) of the NWA, 1998.</p> <p>21. All conditions of the inter-departmental guidelines concerning environmental management and the rehabilitation of ground being disturbed by prospecting and small mine activities must be adhered to.</p> <p>22. Any person who contravenes or, subject to regulation 3, fails to comply with regulation 2, 4 – 13 of the GN 704 (Mining Regulations), is guilty of an offence and liable on conviction to a fine or to imprisonment for a period not exceeding five years.</p> <p>23. These comments shall not be construed as exempting the applicant from compliance with the provision of the Minerals Act, 1991 or any other applicable act, ordinance, regulation or by-law.</p>		
		<p>Comments dated: 22 June 2016</p> <p>Comments received: 11 July 2016</p>	<p>BGCMA submitted the following comments on the DEIAR &amp; EMPR:</p> <ol style="list-style-type: none"> <li>1. The office note that its comments on the Draft Scoping Report dated 19/02/2016 has not been included, assessed or responded to in the Draft Environmental Impact Assessment Report (DEIR).</li> <li>2. Based on the available information contained in the Draft Environmental Impact Assessment Report this office would however like to update its comments as follows: <ol style="list-style-type: none"> <li>a. Based on the available information contained in the DEIR, the activities do not occur within the extent of a water course and are therefore not regarded as Water Use in terms of Section 21(c) &amp; (i) of the National Water Act, 1998 (Act 36 of</li> </ol> </li> </ol>	<p>Greenmined responded, as follows, to the comments submitted by the BGCMA:</p> <p>Greenmined apologize for not including the comments submitted on the Draft Scoping Report in the Draft EIAR. The said comments never reached us and were therefore not included in the Draft EIAR.</p> <p>However the updated comments submitted on the Draft EIAR &amp; EMPR as well as the comments dated 3 May 2016 have been included in the Final EIAR &amp; EMPR to be submitted to DMR for decision making.</p>	<p>Part A(e) Policy and Legislative Context</p>



			<p>1998). No water use authorisation is therefore required.</p> <p>b. This office notes that the contents of the Environmental Management Program and its approach to mitigate any potential impacts.</p> <p>c. This office has no further comments with regard to the proposed activities.</p>		
Klaasvoogds River Irrigation Board (KVRIB)	X	15 February 2016	Greenmined requested confirmation from the KVRIB whether any drainage lines pass through the proposed study area.		Part A(iv)(1)(a) Type of environment affected by the proposed activity
		25 February 2016	Mr. Louis Bruwer from the KVRIB confirmed that no drainage line pass through the proposed study area.	Greenmined used this information in the compilation of the EIAR.	
Heritage Western Cape (HWC)	X		To date no response was received from HWC		
Department of Transport and Public Works (DTPW)	X	15 September 2015	DTPW requested a locality plan and title deed of the proposed property. They also enquired information on how many trips will be generated by the mine on a daily basis and what sort of vehicles is involved.	<p>Greenmined provided the requested Locality Map and Title Deed and further responded that the proposed project will not increase the number of trucks that will travel on public roads.</p> <p>The aggregate will be moved from the processing area to the ready mix plant that is also on the farm via existing roads.</p> <p>Should the applicant be able to use the rock on the farm at the ready mix plant it will rather have a positive impact on traffic, as it will entail the reduction of trucks needed to deliver material to the ready mix plant. Currently the material is bought from outside suppliers that need to deliver it to the farm. It is proposed that the use of rock from the farm could reduce delivery trucks, using the public roads, by ±100 trucks per month (equivalent to ±4 trucks a day).</p>	Part A (d)(ii) Description of the activities to be undertaken

		7 October 2015	DTPW again responded that at this stage they offer no objection however additional information regarding access and trips generated will be required in the future for the Branch to assess the impact of the proposed mine.	Greenmined take note of this and will further investigate the potential traffic impact as part of the Environmental Impact Assessment Process.	Part A (d) (ii) Description of the activities to be undertaken  Part A (iv) (1) (c) Description of specific environmental features and infrastructure on site.
		12 February 2016	DTPW responded on the DSR that at this stage they offer no objection and further comments will be made in terms of the Land Use Planning Ordinance.		
<b>Communities</b>			No resident communities were identified in the immediate surrounding area.		
<b>Dep. Land Affairs</b>	N/A		To date no response was received from the Department of Land Affairs		
<b>Traditional Leaders</b>	N/A		No traditional authorities are resident in the immediate surrounding area.		
<b>Dept. Environmental Affairs</b>	X				
Department of Environmental Affairs and Development Planning (DEA&DP)	X	1 September 2015	The Department of Environmental Affairs and Development Planning responded that DEA&DP is not the competent authority as the Department of Mineral Resources is the competent authority for all mining related activities.	The application was subsequently submitted to DMR and DEA&DP will be consulted as registered I&AP.	

		11 February 2016	<p>DEA&amp;DP submitted the following comments on the DSR:</p> <ol style="list-style-type: none"> <li>1. According to the Department's Web GIS, a watercourse traverses the area identified for the processing of rock/stone. Comments must be obtained to from BGCMA regarding the presence of a watercourse across the proposed site. If there is a watercourse present on site, then additional watercourse related activities in terms of NEMA and the EIA Regulations, 2014 will be triggered and must form part of the application for environmental authorization.</li> <li>2. Clarity should be provided for including Activity 22 of GNR No. 983 as part of the application for environmental authorization.</li> <li>3. The recommendations of CapeNature regarding buffer areas must be included as mitigation measures in the EMPr that forms part of the EIAR.</li> <li>4. The Department awaits the submission of the draft EIAR for commenting purposes.</li> </ol>	<p>Greenmined responded as follows to the comments submitted by DEA&amp;DP:</p> <ol style="list-style-type: none"> <li>1. Greenmined take note of the concern that tributaries to the Klaas Voogds River may possibly traverse the site. Although no streams, drainage lines or other watercourses, flowing through the proposed 4.9 ha application area, could be identified during the site inspection a formal request for confirmation of the above mentioned was put to the Breede Gouritz Catchment Management Agency (BGCMA). Should their comments be received in time it will be added to the Final Scoping Report and a copy of the comments will be made available to DEA&amp;DP. If not, the comments will be added to the Draft EIA report and the matter will be appropriately assessed. Should any watercourse within the proposed footprint area be identified, additional watercourse related activities in terms of the NEMA &amp; EIA regulations, 2014 will be considered and added to the application.</li> <li>2. The reasoning behind including Activity 22 of GNR No 983 as part of the application was that the said activity requires Environmental Authorisation to be obtained for the decommissioning of any activity requiring a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002). It is believed that Activity 22 will be triggered during the decommissioning phase of the proposed activity as the MPRDA requires a permit holder to apply for a</li> </ol>	Part A(iv)(1)(a) Type of environment affected by the proposed activity
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				<p>closure certificate within 180 days from the laps of the mining permit. In order to prevent the necessity of again having to apply for environmental authorisation once the activity has ceased and the applicant wants to rehabilitate and close the permitted area, Activity 22 is added to the initial application for environmental authorisation. It is believed that the environmental impacts related to the opening and closing of the proposed processing activity can successfully be discussed and assessed as part of the current EIA process and therefore the said activity was added to the list of activity that will be triggered.</p> <p>3. Greenmined acknowledge the comment. The recommendations of CapeNature will be added to the EMPR &amp; EIAR.</p> <p>4. DEA&amp;DP will be supplied with a copy of the Draft EIAR and EMPR for their perusal.</p>	
			No comments were received from DEA&DP on the DEIAR & EMP report.		
<b>Other Competent Authorities affected</b>					
Cape Winelands District Municipality	X		To date no response received		
Counselor Kortje (Ward 4)	X		To date no response received		
CapeNature (CN)	X	13 August 2015	<p>CapeNature submitted the following response:</p> <p>1. Several vegetation types including Breede Shale Renosterveld, Breede Alluvium Renosterveld and Robertson Karoo historically covered the proposed</p>	<p>Greenmined takes note and thank CapeNature for the comments submitted and will incorporate it into the EIAR and EMPR.</p>	Part A(iv)(1)(a) Type of environment affected by the proposed activity

			<p>screening area. Breede Alluvium Renosterveld is currently listed as Vulnerable although it is very close to qualifying as Endangered under criterion A1 (remaining extent). Breede Shale Renosterveld and Robertson Karoo are listed as Least Threatened although both are poorly protected. Most of the area as outlined on the locality map has been transformed by agricultural activities although there are a few remnants of natural vegetation</p> <ol style="list-style-type: none"> <li>2. The Martiensklouf River and associated tributaries are present on or near the site. These streams have been determined as Ecological Support Areas (ESAs)</li> <li>3. We note that the application states that the screening process will only occur in existing fields and that no screening activities will occur in areas of natural vegetation. Buffers must be maintained between screening activities and natural vegetation as well as watercourses. Consideration must be given to erosion control and storm water management.</li> <li>4. Note that if the fields have not been cultivated within the last 10 years, this application may trigger the need for authorization in terms of CARA as well as NEMA</li> </ol>		
		25 January 2016	<p>Upon review of the DSR CN commented that they do not object to Alternative 1 provided that appropriate buffers are implemented.</p> <p>CN proposed a minimum buffer of 30m between any mining/processing activities and watercourses and wetlands, and a minimum buffer of at least 20m between any mining/processing activities and natural vegetation.</p> <p>Storm water management and erosion prevention measures must be implemented on site.</p>	<p>Greenmined takes note of the proposed buffer areas and will add the condition to the EIAR and EMPR.</p> <p>Storm water management will be added as a management activity, continuously to be implemented for the duration of the project.</p>	<p>Part A (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.</p> <p>Part A (l) Proposed impact management objectives and the impact management outcomes for</p>

					inclusion in the EMPr
		16 May 2016	CapeNature commented that their previous comments had been adequately addressed, and that they were pleased to note the inclusion of erosion prevention measures, rehabilitation measures as well as on-going measures for clearing of alien invasive plant species. CapeNature added that in addition to the requirements stipulated in the report, no cleared vegetation, alien species or other, should be dumped in areas containing indigenous vegetation. CapeNature stated that they do not object to Alternative 1 but would have objected to Alternative 2 had this been put forward as the preferred alternative.	The additional requirement with regard to cleared vegetation not to be dumped in areas containing indigenous vegetation was added to the FEIAR & EMPr.	Part A (iv) (1) (viii) The possible mitigation measures that could be applied on the level of risk – Loss of natural vegetation (Site Alternative 1)
Department of Agriculture	X	14 September 2015	The Department of Agriculture telephonically confirmed that if no new fields are opened the proposed project does not trigger the CARA act.	Department of Agriculture was registered as I&AP.	
		Comments dated: 31 May 2016  Comments received: 20 June 2016	Mr van der Walt submitted the following comments dated 31 May 2016 received by Greenmined on the 20 <sup>th</sup> of June 2016:  As the mandate of the Western Cape Department of Agriculture is to protect agricultural land the WCDOA objects to the preferred Alternative 1 as it is on previously cultivated land and also objects to the argument that it is disturbed by agricultural activities and therefor an option of choice. The comment submitted by the WCDOA was made to the relevant deciding authorities in terms of the Subdivision Agricultural Land Act 70 of 1970.	Greenmined responded to the comments received from DoA by requesting that the matter be discussed as CapeNature submitted comments that the use of Site Alternative 2 is unacceptable to them as it will entail the removal of natural vegetation. CapeNature further supported the use of Site Alternative 1 as preferred alternative. During the initial public participation process the project was also discussed with Mr. Rudolph Roscher from the Department of Agriculture who did not object to the site being identified on an existing field.  It was further stated that the end use for the area, upon rehabilitation of the site is agriculture. The land use of the 4.9ha area will therefore change temporarily upon which it will revert back to agriculture.	Part A (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.

				A project overview and the objection to the use of cultivated land was telephonically discussed with Mr. Van Der Walt on the 19 <sup>th</sup> of July 2016 and he confirmed having a better understanding of the proposed project afterwards. DoA submitted no additional comments.	
Department of Social Development	X	14 August 2015	The Department of Social Development responded that they do not have comments on the project.		
Department of Labor	X		No response received		
<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 biophysical, cultural and socio-economic environment that may be affected and the baseline conditions, which are likely to be affected by the proposed processing activity.

A detailed site selection and sensitivity analysis were conducted for the proposed processing project and it was indicated that the proposed site (Site alternative 1) is in a preferred and acceptable development area. A comprehensive Environmental Management Programme (EMPr) has been developed and need to be implemented to mitigate and minimise the impacts during the site establishment/construction and operational phases.

**PHYSICAL ENVIRONMENT**

**CLIMATE**

The Robertson area receives an average of 255 mm of precipitation per year. The highest amount of rainfall usually occurs in August averaging 35 mm, while the lowest occurs in January with an average of 8 mm. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures range from 16.7°C in July to 29°C in February.

**AIR AND NOISE QUALITY**

The air and noise ambiance of the study area is representative of that of an agricultural environment in which farming equipment operates with occasional high dust emissions from denuded areas. The traffic on the Klaasvoogds (East) road and surrounding farm roads also contribute to air and noise emissions.

The noise to be generated at the proposed processing operation is expected to temporarily increase the noise levels of the area due to the operation of the crusher plant, and the loading and transportation of the material. The processing activity will contribute the noise generation of one Excavator, the Crusher Plant and approximately 5 – 10 Dumper trucks per day. The noise impact of the proposed activity is expected to be representative of noise generated by agricultural activities on the farm.

The nearest residence is that of the landowner and applicant ( $\pm 800$  m) with the houses of the bordering residents being more than 1 km away from the proposed processing area. The significance of noise on the surrounding environment is therefore deemed to be of low significance. Mitigation measures must be implemented to ensure employees conducts them



in an acceptable manner while on site in order to lessen the noise impact of the proposed activity on the surrounding environment.

Dust is generally generated by the movement of earthmoving equipment, crushing and loading of material, and vehicles transporting material from site. Although the proposed operation requires no blasting or excavation the crusher plant may from time to time generate dust that could affect the air quality of the surrounding environment. If needed, dust suppression will be implemented on the crusher plant and access roads in order to control dust generation.

### **TOPOGRAPHY**

The topography of the area can best be described as an area with low hills, slightly undulating to undulating plans and lower mountain slopes. The altitude of the proposed processing area lays between 330 masl at the northern boundary and 303 masl at the southern boundary. Further to the north, the altitude increases to approximately 1400 masl at the top of Langeberg. The proposed project will not have an impact on the topography, as all activities will be conducted at surface level.

### **GEOLOGY AND SOIL**

The geology of the area is described as loamy sand with high gravel and cobble contents of alluvial fans and river terraces, overlying a variety of rocks from the Cape and Karoo Supergroups as well as the Uitenhage Group. Glenrosa and Mispah forms and soils with prisma-cutanic and/or pedocutanic diagnostic horizons are dominant.

The applicant will process the waste rock/stone screened from the fields by the landowner in order to produce aggregate that can be used in the ready mix process or sold to the building industry.

### **SURFACE AND GROUNDWATER**

The proposed processing area will be more than 100m from any natural water source. The streams on the farm are non-perennial and heavily impacted by agriculture. The streams however still have some limited ecological functioning in terms of providing ecological corridors and have therefore been determined as Ecological Support Areas. CapeNature highlighted that the Martienskloof River and associated tributaries are present on or near the site. The Martienskloof River passes through the property approximately 400 m from the proposed processing area. Two earthen dams are situated between the river and the processing area at approximately 330 m away. No other natural water sources could be identified on or within close proximity to the proposed processing area.

Due to the change in elevation (329 masl – 302 masl), run-off water (rain) will gravitate in a southern direction across the study area. During the commenting period the Department of Environmental Affairs and Development Planning (DEA&DP) requested confirmation from the

Breede Gouritz Catchment Management Area (BGCMA) whether tributaries from a watercourse traverse the proposed processing area. As mentioned earlier BGCMA suggested that this matter be confirmed by the Klaasvoogds River Irrigation Board (KVRIB). The KVRIB, upon scrutinising available hydro senses data of the area, confirmed that no watercourse or drainage line could be identified that traverse the proposed processing area.

In order to prevent erosion of the disturbed footprint area, it is proposed that the topsoil stockpiles be placed along the northern and western boundaries of the study area. The berms will direct clean run-off water around the working area, while shielding the processing area against high velocity run-off. Once vegetation has established on the topsoil heaps (as stipulated by the mitigation measures) it is believed the roots of the plants will provide sufficient protection against storm-water in order to prevent erosion of the topsoil heaps. Site management will however have to monitor the integrity of the topsoil heaps weekly. Any signs of erosion must be rectified directly by implementing soil erosion protection measures.

CapeNature proposed that a 30m buffer area must be allowed for between the processing area and any watercourse and/or wetland. The Langeberg Local Municipality proposed a 32m buffer area. The latter buffer area will be maintained on-site.

As all activities will be on surface level, no impact on the groundwater could be identified.

## **BIOLOGICAL ENVIRONMENT**

### **GROUNDCOVER**

According to CapeNature the proposed screening area was historically covered by several vegetation types including Breede Shale Renosterveld (FRs 8), Breede Alluvium Renosterveld (FRa 1) and Robertson Karoo (SKv 7). Breede Alluvium Renosterveld is currently listed as Vulnerable. Breede Shale Renosterveld and Robertson Karoo are listed as Least Threatened.

Undisturbed or natural areas of the above mentioned vegetation types is characterised by low, cupressoid-leaved shrubland usually dominated by Renosterbos. According to Rutherford and Mucina (2006) elements of shale fynbos is present the Breede Shale Renosterveld that grades into Robertson Karoo in the central valley, with Karoo shrublands usually occurring on the northern aspects and renosterveld found on the southern aspects. Heuweltjies are very prominent, with either bush clumps in moister areas or succulent shrubs in drier habitats.

The area identified as Site Alternative 1 has been transformed by agricultural activities and no remnants of natural Renosterveld or Robertson Karoo is present. Site Alternative 2 resembles the above-mentioned vegetation veld types.

CapeNature proposed that a minimum buffer of 20 m be maintained between the processing area and areas with natural vegetation.

## **FAUNA**

No resident fauna were noticed within the boundaries of the proposed processing area as it has previously been used as a field. The proposed processing of stockpiled rock/stone within the area will not affect the fauna of the surrounding area, as they will be able to move away or through the work area without being harmed. The proposed processing area will not have any deep excavations in which fauna may be stuck or injured.

## **HUMAN ENVIRONMENT:**

### **CULTURAL AND HERITAGE ENVIRONMENT**

According to discussions with the landowner the property has been farmed for numerous years. The particular area earmarked for the processing area was transformed from Renosterveld to fields and used for crop production.

During a desktop study of the surrounding area it was found that the Robertson area was established in 1853 within an area that fell in the boundaries of the Swellendam district. The names of the original farms, used for sheep farming, are still used e.g. Roodezant, Le Chasseur, Retreat, Noree, Goree, Klaasvoods, Goudmyn, Vloikheid. With completion of the railway line from Worcester to the coastal regions in 1887, the trading post Roodewal became a railway station. Shortly afterwards it was renamed Ashton, in honour of Job Ashton, director and railway engineer. Ashton gained municipal status in 1956. The areas between these two towns were historically extensively used for agricultural activities including sheep- and ostrich farming as well as crop and wind production.

No area or artefact of cultural or heritage importance could be identified within 100 m of the proposed processing area, nor will the activity entail any below surface disturbance. However, should any evidence of archaeological importance be discovered during the operational phase of the project, all work will immediately be stopped immediately and HWC will be notified immediately.

### **SOCIO-ECONOMIC ENVIRONMENT**

The proposed processing area is situated within the Cape Winelands District under the Langeberg Local Municipality. According to the 204/2015 IDP, the municipal area has a population of 97 714 people with Robertson contributing 27 715 and Ashton 13 325 to the total.

Robertson is described as the western gateway to The Heart of Route 62. Robertson is one of the largest wine-producing regions in South Africa. Ashton is smaller and situated between Robertson and Swellendam hosting the Administrative Head Office of the Langeberg Municipality.



The IDP shows that the number of people employed in Ward 4 increased from 2001 to 2011 while people who were unemployed and not economically active decreased from 370 to 322 and 1 754 to 1616 respectively in the same period. Monthly household income was found to have slightly decreased while there is a high increase of households with a monthly income between R1 601 – R3 200. Agriculture is the main economic activity in the District forming about 38% of the GGP.

The waste rock/stone to be processed at the area will be used in the ready mix plant of the applicant. Due to an increase in building and infrastructure development in the municipal area the need for ready mixed concrete increased in correspondence. By using the waste rock of the property the applicant will be able to obtain reasonable priced material that can be used in the ready mix production process. The applicant will also assist the landowner in removing unwanted waste rock from the perimeter of his fields. Rock that does not comply with size specifications for ready mix will be sold as base course or other material to contractors in the surrounding area.

The proposed activity will not only assist the applicant and landowner but also indirectly contribute to the economy of the immediate municipal area and infrastructure development. The proposed activity will generate approximately five work opportunities that will be available to local residents.

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

Portion 3 of the farm Klaas Voogds Rivier 37 is situated in an agricultural setting between Robertson and Ashton, to the north of the R60. The land use of the property comprise the following:

-  Agriculture – Mainly for cultivation of export vegetables and fruit. Upon closure of the proposed processing area the site will be returned to agricultural use.
-  Light Industrial – CP Concrete operates a ready mix plant (±800 m away). The plant is of small scale and comprise of a Weight Bin into which the sand, cement (bagged cement – no silo necessary) and aggregate is fed by a Loader. From the Weight Bin the mix is fed via conveyor belt into the waiting Concrete Truck where it is mixed during transport to the client. Water is added directly into the Concrete Truck. The approximate output of the Ready Mix plant is ±1 000 – 1 500m<sup>3</sup> concrete / month. The activity has been operational for the last 7 – 8 years.

The plant is situated on a concreted area at the back of the packing warehouses.

- ✚ Transport – Minor roads 6035 and 6036 pass the processing area to the south. These roads are public roads used by residents of the area.

The land use of the surrounding properties comprise of the following:

- ✚ Agriculture – Grazing, Orchards and Vineyards,
- ✚ Tourism & Recreation – Fraai Uitzicht 1798 (Pty) Ltd operates a 4 star guest house, restaurant and wine cellar ( $\pm 1$  km away),
- ✚ Transport – The Klaasvoogs (East) road pass the property to the west ( $\pm 950$  m) with the R60 passing the property to the south ( $\pm 4$  km),
- ✚ Mining – Crushing and screening of waste rock is already done on some of the surrounding properties.

It is expected that the proposed processing activity will have a very low impact on the surrounding environment as activities will be contained within the boundaries of the site and will entail the use of the waste rock/stone stockpiled on the property. The proposed footprint area will not require the building of any permanent structures. The proposed production of aggregate on the property will also reduce the amount of trucks delivering aggregate, from outside sources, to the ready-mix plant by approximately 100 trucks per month. This will have a direct positive impact on the traffic volumes of the surrounding roads.

Langeberg Local Municipality (LLM) confirmed that Portion 3 of the farm Klaas Voogds Rivier 37 is zoned Agricultural Zone 1 in terms of the Section 8 Zoning Scheme Regulations. Agricultural zone 1 has agriculture as primary use. LLM stated that the proposed activities do not fall within the above definition and an application must be submitted for a temporary departure from the zoning provisions.

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

**SPECIFIC ENVIRONMENTAL FEATURES**

**VEGETATION**

The site was historically covered by vegetation representative of the Breede Shale Renosterveld, Breede Alluvium Renosterveld and Robertson Karoo. Breede Alluvium Renosterveld is currently listed as Vulnerable. Breede Shale Renosterveld and Robertson Karoo are listed as Least Threatened. However should Site Alternative 1 be approved, the vegetation of the study area has been transformed by agricultural activities and no natural Renosterveld vegetation remains.

CapeNature proposed that a 20m buffer area must be allowed for between the processing area and any adjacent area with natural vegetation.

**EXISTING INFRASTRUCTURE**

As the proposed footprint area was previously used for agricultural purposes, no infrastructure exists within the boundaries of the processing area.

The existing roads will be used to gain access to the processing area. Access to the site will be along the partly tarred Klaasvoogs (East) Road (connecting to the R60), from where vehicles will turn onto the existing gravel minor road traversing the property that provides direct access to the processing area.

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

(Show all environmental, and current land use features)

The environmental and current land use map is attached as Appendix C.

**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 each main activity in each phase. The significance rating was determined using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact rating listed below was determined for each impact **prior** to bringing the proposed mitigation measures into consideration, therefore the worst case scenario and should be seen as a preliminary assessment. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

## STRIPPING AND STOCKPILING OF TOPSOIL:

Visual intrusion associated with the establishment of the processing area

**Rating: Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.7	5	5	5	13.5

Loss of natural vegetation (Site Alternative 1)

**Rating: Low**

**Degree of Mitigation: No Mitigation Needed**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.7	1	1	1	2.7

Loss of natural vegetation (Site Alternative 2)

**Rating: Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.7	5	5	5	13.5

Dust nuisance caused by the disturbance of the soil

**Rating: Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	2	2	2	5	5	5	10

Noise nuisance caused by machinery stripping and stockpiling the topsoil

**Rating: Low**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	1	1.3	4	3	3.5	4.6

Infestation of the topsoil heaps by weeds or invader plants

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	4	2	3	6.9

Loss of topsoil due to incorrect storm water management

**Rating: Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	5	3	4	<b>10.4</b>

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	2	3.3	4	4	4	<b>13.2</b>

### **CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE:**

Visual intrusion associated with the crushing and screening activities

**Rating: Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	5	5	5	<b>13</b>

Dust nuisance due to crushing activities

**Rating: Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	5	5	5	<b>11.5</b>

Noise nuisance generated by crushing activities

**Rating: Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	4	5	4.5	<b>10.4</b>

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	4	5	4.5	<b>13.5</b>



Weed and invader plant infestation of the area

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	4	2	3	6.9

### LOADING AND TRANSPORTING

Dust nuisance due to loading and vehicles transporting the material

**Rating: Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	4	5	4.5	11.7

Impact on the access roads

**Rating: Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	2	3	4	5	4.5	13.5

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	2	3.3	4	5	4.5	14.9

### SLOPING AND LANDSCAPING UPON CLOSURE OF THE SITE

Soil erosion

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	3	3	3	9

Dust nuisance caused during landscaping activities

**Rating: Low – Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	3	1	2	4	5	4.5	<b>9</b>

Noise nuisance caused by machinery

**Rating: Low – Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	2	1.6	3	5	4	<b>6.4</b>

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	3	1	2	<b>6</b>

**REPLACING OF TOPSOIL AND REHABILITATION OF DISTURBED AREA:**

Loss of reinstated topsoil due to the absence of vegetation

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	3	1	2.3	3	2	2.5	<b>5.8</b>

Infestation of the area by weeds and invader plants

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	4	2	3	<b>7.8</b>

**POTENTIAL POSITIVE IMPACTS**

- ✚ Work opportunities to five workers,
- ✚ Reduction of approximately 100 trucks/month currently delivering aggregate to the read-mix plant.
- ✚ Should Site Alternative 1 be approved an already transformed area can be used for the establishment of the processing activities, and no natural vegetation will be impacted on.

- ✚ Contribution to the construction industry that is an important economic sector in the Cape Winelands District.
- ✚ Opportunity to landowner to diversify income on the property as well as dispose of waste rock/stones on the perimeter of his fields.

**Associated Positive Impacts – Temporary Infrastructure:**

- ✚ Low intensity site establishment,
- ✚ Easy movement of infrastructure as project progress,
- ✚ Complete removal of infrastructure at closure of the activity.

**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 affects the biophysical and socio-economic environment.

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

**Rating of Severity:**

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-harmful	Small / Potentially harmful	Significant/ Harmful	Great/ Very harmful	Disastrous 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/ High potential to mitigate impacts to level of insignificance/ Easily reversible	Low cost to mitigate	Substantial cost to mitigate/ Potential to mitigate impacts/ Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact 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.

**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.

**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/neighboring 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.

#### **Example of calculating Overall Consequence**

<b>Consequence</b>	<b>Rating</b>
Severity	Example 4
Duration	Example 2
Extent	Example 4
<b>SUBTOTAL</b>	<b>10</b>
<b>TOTAL CONSEQUENCE:</b> (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.

#### **Rating of Frequency:**

<b>Rating</b>	<b>Description</b>
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.

#### **Rating of Probability:**

<b>Rating</b>	<b>Description</b>
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.

#### **Example of calculating Overall Likelihood**

Consequence	Rating
Frequency	Example 4
Probability	Example 2
<b>SUBTOTAL</b>	<b>6</b>
<b>TOTAL LIKELIHOOD</b> (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.

**Determination of Overall Environmental Significance**

Significance or Risk	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.

**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. Acceptable.	Impact is of low order and therefore likely to have little real effect. 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. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. 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)

Site Alternative 1 (S1) entails the processing of the rock/stone on a previously transformed area. The footprint of this alternative was previously altered by the agricultural activities of the farm transforming the vegetation of the area from natural occurring Renosterveld to fields. The use of this area will therefore not necessitate the removal of natural Renosterveld vegetation. S1 is deemed a more preferred alternative than the area proposed for S2.

S2 will necessitate the disturbance of the Renosterveld area on the farm in order to allow for the establishment of the processing area.



Potential Negative Impacts associated with the project (Site Alternative 1) includes:

- ✚ Visual intrusion associated with the establishment of the processing area
- ✚ Dust nuisance caused by the disturbance of the soil, crushing activities and loading and transporting of material
- ✚ Noise nuisance caused by machinery stripping and stockpiling the topsoil, crushing activities
- ✚ Infestation of the topsoil heaps and processing area by weeds or invader plants
- ✚ Loss of topsoil due to incorrect storm water management
- ✚ Contamination of area with hydrocarbons or hazardous waste materials
- ✚ Visual intrusion associated with the crushing and screening activities
- ✚ Impact on the access roads
- ✚ Soil erosion
- ✚ Loss of reinstated topsoil due to the absence of vegetation

Potential Positive Impacts associated with the project (Site Alternative 1) includes:

- ✚ Work opportunities to five employees
- ✚ Reduction in the amount of trucks delivering aggregate to the ready mix plant
- ✚ Contribution to the construction industry that is an important economic sector in the Cape Winelands District.
- ✚ Opportunity to landowner to diversify income on the property as well as dispose of waste rock/stones on the perimeter of his fields.

**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).

The following mitigation measures are proposed to address/minimize the impact of the proposed activity on the surrounding environment:

**Visual Mitigation:**

Although it is proposed that the orchard to the east of the site will assist in screening the activities, the project will still have an impact on the visual character of the surrounding environment. The risk of the proposed processing activities having a negative impact on the aesthetic quality of the surrounding environment can however be reduced to a low-medium risk through the implementation of the mitigation measures listed below:

- ✚ The site must have a neat appearance and be kept in good condition at all times.
- ✚ The height of the stockpiles must be limited to 3 m to manage the visual impact on the surrounding environment.
- ✚ Upon rehabilitation of the processing area all infrastructure must be removed and the area must be returned to its prior status.

### **Dust Handling:**

The risk of dust, generated from the proposed processing activities, having a negative impact on the surrounding environment can be reduced to being low-medium through the implementation of the mitigation measures listed below:

- ✚ 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.
- ✚ Water sprayers must be added to the crushing infrastructure to control dust emissions from the conveyor belts.
- ✚ During periods of high wind spells, the stockpiles must be dampened to control dust emission.
- ✚ The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- ✚ Speed on the access roads must be limited to 40km/h to prevent the generation of excess dust.
- ✚ Gravel roads 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.
- ✚ Fallout dust monitoring must be implemented in order to ensure compliance of the site with the fallout dust standards from the National Dust Control Regulations, 2013.

### **Noise Handling:**

The risk of noise, generated from the proposed processing activities, having a negative impact on the surrounding environment can be reduced to being low-medium through the implementation of the mitigation measures listed below:

- ✚ All crushing and screening activities must be limited to daylight hours, and no crushing or screening may be done on Sundays.
- ✚ The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- ✚ No loud music may be permitted at the processing area.
- ✚ All project-associated vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.
- ✚ Should the permit holder receive complaints with regard to boundary noise a noise impact study has to be conducted by a qualified specialist.

### **Management of weed- or invader plants:**

The risk of weeds or invader plants invading the disturbed area can be reduced to being low through the implementation of the mitigation measures listed below:

- ✚ A weed and invader plant management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).

- ✚ 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 with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide."
- ✚ The temporary topsoil stockpiles needs to be kept free of weeds.

### **Loss of topsoil due to incorrect storm water management**

The risk of erosion or loss of topsoil due to uncontrolled storm water flowing through the study area can be reduced to being low through the implementation of the mitigation measures listed below:

- ✚ Storm water must be diverted around the processing and stockpile areas to prevent erosion.
- ✚ Topsoil heaps must be stockpiled along the northern and western boundaries of the study area to divert runoff water away from the processing area. Site management must weekly monitor the stockpiles and should any signs of erosion become apparent soil erosion protection measures must be implemented.
- ✚ The effectiveness of any storm water infrastructure needs to be continuously monitored.
- ✚ The activity must be conducted 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 of Mineral Resources 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.
  - Storm water management must apply for the entire life cycle of the site 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.

### **Loss of natural vegetation (Site Alternative 1):**

The risk of the proposed processing activities of S1 having a negative impact on the natural vegetation of the surrounding environment can be reduced to being low through the implementation of the mitigation measures listed below:

- ✚ All activities must be contained within the boundaries of the approved processing area.
- ✚ A 20 m buffer area needs to be demarcated; sign posted and managed as no-go area between the processing activities and areas with natural vegetation.

- ✚ No cleared vegetation, alien species or other, may be dumped in areas containing indigenous vegetation.

### **Loss of natural vegetation (Site Alternative 2):**

The risk of the proposed processing activities of S2 having a negative impact on the natural vegetation of the footprint area cannot be reduced and is deemed to be of medium significance.

### **Negative impact on fauna that may enter the area:**

The risk of the proposed processing activities having a negative impact on the fauna of the footprint area as well as the surrounding environment can be reduced to being low through the implementation of the mitigation measures listed below:

- ✚ The site manager must ensure that no fauna is caught, killed, harmed, sold or played with.
- ✚ 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.

### **Contamination of surface or groundwater due to hazardous spills not cleaned:**

The risk of waste generation having a negative impact on the surrounding environment can be reduced to being low through the implementation of the mitigation measures listed below:

- ✚ No pollution of surface water or ground water resources may occur due to any activity.
- ✚ No storm water runoff from any premises containing waste, or water containing waste emanating from industrial activities and premises may be discharged into a water resource. Polluted storm water must be contained.
- ✚ Regular vehicle maintenance may only take place at the existing workshop on the farm. If emergency repairs is needed 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 formal 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 to the satisfaction of the Regional Manager of DMR 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, collected on a weekly basis, and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or near the processing area.

- ✚ Biodegradable refuse generated must be handled as indicated above.

### **Impact on the access roads:**

The risk of the condition of the gravel roads deteriorating as a result of the proposed processing activities can be reduced to being low – medium through the implementation of the mitigation measures listed below:

- ✚ Storm water must be diverted around the access roads to prevent erosion.
- ✚ Vehicular movement must be restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.
- ✚ The applicant must repair rutting and erosion of the access road caused because of the processing activities.

### **Erosion of returned topsoil after rehabilitation:**

The risk of erosion of returned topsoil can be reduced to being low through the implementation of the mitigation measures listed below:

- ✚ Storm water must be controlled via temporary banks to prevent run-off causing down-slope erosion.
- ✚ Topsoil spreading may only be done at a time of year when vegetation cover can be established as quickly as possible. This will minimize erosion of returned topsoil by both rain and wind. 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.
- ✚ A cover crop must be planted and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. 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.
- ✚ The rehabilitated area must be monitored for erosion, and appropriately stabilized should any erosion occurs.

### **Management of Health and Safety Risks:**

- ✚ Workers must have access to the correct personal protection equipment (PPE) as required by law.
- ✚ All operations must comply with the Occupational Health and Safety Act as well as the Mine Health and Safety Act.
- ✚ The water provided for domestic use / human consumption must comply with the SANS 241:2001 guidelines for drinking water. Regular monitoring must be done to ensure compliance. If the quality of the water is of such a nature that it is a threat to human health, then the officials from the Breede Gouritz Catchment Management Agency

(BGCMA) and the Provincial Department of Health (DoH) must be informed of the procedures to rectify the problem.

- ✚ If sewerage facilities for mine workers is necessary. A buffer area of a least 100 m or above the 1:100 year flood line from the edge of any watercourse whether permanent or non- permanent, must be applied when installing any type of sewerage disposal system.

### **Topsoil Handling:**

Poor topsoil management during the operational phase may result in the loss of topsoil needed for rehabilitation of the disturbed area. Disturbance and dilution of topsoil can cause loss of fertility as a result of reduced organic carbon and biological activity. The following mitigation measures with regard to topsoil handling is proposed:

- ✚ 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.
- ✚ Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The proposed project program must be such that topsoil is stockpiled for the minimum possible time.
- ✚ The upper 500 mm of the soil must be stripped and stockpiled before commencement of the processing activities.
- ✚ Topsoil stockpiles must be protected against losses by water and wind erosion. Topsoil heaps must be planted with indigenous grass species if vegetation does not naturally establish within 6 months of stockpiling to prevent soil erosion and to discourage growth of weeds.
- ✚ Topsoil heaps must not exceed 1.5 m in order to preserve microorganisms 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 and access roads to prevent erosion.

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

N/A

### **x) Statement motivating the alternative development location within the overall site.** (Provide a statement motivating the final site layout that is proposed)

As mentioned previously Site Alternative 1 is deemed the preferred site as it will not have an impact on any fynbos, Renosterveld or other natural vegetation deemed to be protected.

Due to the remote location of the processing area the potential impacts on the surrounding environment is deemed to be of low significance. It is proposed that all processing related infrastructure will be contained within the boundary of the processing area.

As no permanent infrastructure will be established on site, the layout/position of the temporary infrastructure will be determined by the stockpiling of waste rock and available space within the 4.9 ha area.

Should the conditions listed below be implemented it is believed that the potential impacts associated with the proposed project can be mitigated and the overall impact of the proposed project on the surrounding environment can be controlled:

1. **CapeNature** - Upon review of the DSR and DEIAR & EMPR CN commented that they do not object to Alternative 1 provided that appropriate buffers are implemented. CN proposed a minimum buffer of 30 m between any mining/processing activities and watercourses and wetlands, and a minimum buffer of at least 20 m between any mining/processing activities and natural vegetation. CN further stipulated that no cleared vegetation, alien species or other, may be dumped in areas containing indigenous vegetation.
  
2. **Mr. Papesch** – The following must be implemented during the operational phase:
  - ✚ Visual Impact – The height of the stockpiles must be limited to 3 m to manage the visual impact.
  - ✚ Restriction of activities to specific periods during the year and day – The applicant must limit all processing activities to daylight hours, and no crushing or screening may be done on Sundays to minimize the noise impact on the surrounding environment.
  - ✚ Transport of stone limited to the Ashton gravel road – The suggestion that the transport of the stone be limited to the Ashton gravel road is not a viable option. Apart from this road being a detour, it is believed that the Ashton road will not be able to handle the additional traffic especially with regard to an increase in heavy vehicles.
  - ✚ Dust – Fallout dust monitoring must be implemented in order to ensure compliance of the site with the fallout dust standards from the National Dust Control Regulations, 2013.
  - ✚ Noise – Should the permit holder receive complaints with regard to boundary noise a noise impact study has to be conducted by a qualified specialist.
  
3. **Agriculture** – Upon closure of the site the area has to revert back to agricultural use.

- 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).

During the impact assessment process the following potential impacts were identified of each main activity in each phase. 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 processing activity may have on the surrounding environment.

The significance rating was again determined for each impact 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.

### STRIPPING AND STOCKPILING OF TOPSOIL:

Visual intrusion associated with the establishment of the processing area

**Rating: Low – Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.7	2	2	2	5.4

Loss of natural vegetation (Site Alternative 1)

**Rating: Low**

**Degree of Mitigation: No Mitigation Needed**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.7	1	1	1	2.7

Loss of natural vegetation (Site Alternative 2)

**Rating: Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.7	5	3	4	10.8



Dust nuisance caused by the disturbance of the soil

**Rating: Low – Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	2	2	2	3	2	2.5	5

Noise nuisance caused by machinery stripping and stockpiling the topsoil

**Rating: Low**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	1	1.3	3	3	3	3.9

Infestation of the topsoil heaps by weeds or invader plants

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	2	2	2	4.6

Loss of topsoil due to incorrect storm water management

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	2	2	2	5.2

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	2	2	2	6

### **CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE:**

Visual intrusion associated with the crushing and screening activities

**Rating: Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	4	5	4.5	11.7

Dust nuisance due to crushing activities

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	2	2	2	4.6

Noise nuisance generated by crushing activities

**Rating: Low – Medium**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	3	4	3.5	8.1

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	2	1	1.5	4.5

Weeds and invader plant infestation of the area

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	2	2	2	4.6

## LOADING AND TRANSPORTING

Dust nuisance due to loading and vehicles transporting the material

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	3	3	3	7.8

Impact on the access roads

**Rating: Low – Medium**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	2	3	3	1	2	6

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	2	1	1.5	4.5

**SLOPING AND LANDSCAPING UPON CLOSURE OF THE SITE**

Soil erosion

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	2	1	1.5	4.5

Dust nuisance caused during landscaping activities

**Rating: Low**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	3	1	2	2	1	1.5	3

Noise nuisance caused by machinery

**Rating: Low**

**Degree of Mitigation: Partial**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	2	1.6	3	1	2	3.2

Contamination of area with hydrocarbons or hazardous waste materials

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	2	1	1.5	4.5

## REPLACING OF TOPSOIL AND REHABILITATION OF DISTURBED AREA

Loss of reinstated topsoil due to the absence of vegetation

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	3	1	2.3	2	1	1.5	3.5

Infestation of the area by weeds and invader plants

**Rating: Low**

**Degree of Mitigation: Fully Mitigated**

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	2	1	1.5	3.9

**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).

<b>ACTIVITY</b> Whether listed or not listed.  (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.)	<b>POTENTIAL IMPACT</b>  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution, etc...etc...etc.)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated.  (E.g. Construction, commissioning, operational Decommissioning closure, post closure.)	<b>SIGNIFICANCE</b> If not mitigated.	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc etc)  E.g. Modify through alternative method Control through noise control Control through management and monitoring through rehabilitation.	<b>SIGNIFICANCE</b> If not mitigated.
Demarcation of site with visible beacons.	No impact could be identified other than the beacons being outside the boundaries of the approved processing area.	N/A	Construction / Site Establishment phase	N/A	N/A	N/A
Establishment of mobile crusher and ablution infrastructure within boundaries of site.	If the infrastructure is established within the boundaries of the approved processing area no impact could be identified.	N/A	Construction / Site Establishment phase	N/A	N/A	N/A

<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Visual impact due to removal of topsoil.	The visual impact may affect the aesthetics of the landscape.	Operational phase	Medium	<u>Control:</u> Implementation of proper housekeeping	Low – Medium
	Loss of natural vegetation (Site Alternative 1)	The loss of natural vegetation may affect the biodiversity of the surrounding environment.	Operational phase	Low	<u>Control:</u> Management of buffer areas and demarcation of work areas	Low
	Loss of natural vegetation (Site Alternative 2)	The loss of natural vegetation may affect the biodiversity of the surrounding environment.	Operational phase	Medium	<u>Modify:</u> Consider use of a less sensitive area	Medium
	Dust nuisance caused by the disturbance of soil.	Dust will be contained within the property boundaries and will therefore affect only the landowner.	Operational phase	Medium	<u>Control:</u> Dust suppression	Low – Medium
	Noise nuisance caused by machinery stripping and stockpiling the topsoil.	The noise impact should be contained within the boundaries of the property,	Operational phase	Low	<u>Control:</u> Noise control measures	Low

		and will represent the current noise levels of the farm.				
	Infestation of the topsoil heaps by weeds and invader plants.	Biodiversity	Operational phase	Low – Medium	<u>Control &amp; Remedy:</u> Implementation of weed control	Low
	Loss of topsoil due to incorrect storm water management	Loss of topsoil will affect the rehabilitation of the processing area and the future agricultural potential of the site.	Operational phase	Medium	<u>Control:</u> Storm water management	Low – Medium
	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Operational phase	Medium	<u>Control:</u> Waste management	Low – Medium

<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Visual impact associated with the crushing and screening activities	The visual impact may affect the aesthetics of the landscape.	Operational phase	Medium	<u>Control:</u> Implementation of proper housekeeping	Medium
	Dust nuisance due to crushing activities	Dust will be contained within the property boundaries and will therefore affect only the landowner.	Operational phase	Medium	<u>Control:</u> Dust suppression	Low
	Noise nuisance generated by crushing activities	The noise impact should be contained within the boundaries of the property, and will relate to the existing equipment operating on-site.	Operational phase	Medium	<u>Control:</u> Noise management	Low – Medium
	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Operational phase	Medium	<u>Control:</u> Waste management	Low



	Weeds and invader plant infestation of the area	Biodiversity	Operational phase	Low – Medium	<u>Control &amp; Remedy:</u> Implementation of weed control	Low
<b>LOADING AND TRANSPORTING</b>	Dust nuisance due to loading and transportation of the material	Should dust levels become excessive it may have an impact on surrounding landowners.	Operational phase	Medium	<u>Control:</u> Dust suppression	Low – Medium
	Impact on the access roads	All road users will be affected	Operational phase	Medium	<u>Control &amp; Remedy:</u> Road management	Low – Medium
	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Operational phase	Medium	<u>Control:</u> Waste management	Low

<b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)</b>	Erosion of returned topsoil after rehabilitation	Soil erosion, may affect the agricultural potential of the site after closure of the mine.	Decommissioning phase	Low – Medium	<u>Control:</u> Soil management and seeding of mined areas	Low
	Dust nuisance caused during landscaping activities	Should dust levels become excessive it may have an impact on surrounding landowners.	Decommissioning phase	Low – Medium	<u>Control:</u> Dust suppression	Low
	Noise nuisance caused by machinery	Should noise levels become excessive it may have an impact on surrounding landowners.	Decommissioning phase	Low – Medium	<u>Control:</u> Noise management	Low
	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Decommissioning phase	Low – Medium	<u>Control:</u> Waste management	Low
	Loss of reinstated topsoil due to the absence of vegetation	Loss of topsoil will affect the rehabilitation of the processing area and the	Decommissioning phase	Low – Medium	<u>Control:</u> Storm water management	Low

		future agricultural potential of the site.				
	Weeds and invader plant infestation of the area	Biodiversity	Decommissioning phase	Low – Medium	Control & Remedy: Implementation of weed control	Low

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

**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):

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
No specialist studies were deemed necessary for this project as the project entails the processing of stockpiled waste rock/stone on an already transformed area.			

Attach copies of Specialist Reports as appendices

## **k) Environmental impact statement**

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

The key findings of the environmental impact assessment entail the following:

#### **Project proposal:**

- ✚ The project entails the crushing and screening of stockpiled stone/rock on a 4.9 ha area that was previously used for agricultural purposes. The crushed material will be used in the ready mix plant of CP Concrete, firstly allowing the applicant to source the required rock locally, while secondly assisting the landowner in the disposal of the waste rock screened from his fields to allow for crop production. Should this application be approved it will greatly reduce the number of trucks ( $\pm 100$  trucks/month) delivering aggregate to the ready mix plant and will therefore have a direct positive impact on the traffic and roads of the surrounding environment.

#### **Vegetation:**

- ✚ The proposed footprint area identified for the processing activity has previously been transformed by agricultural processes and therefore no natural areas or vegetation needs to be disturbed as a result of the proposed project.
- ✚ CapeNature responded that upon review of the DSR and DEIAR & EMPR they do not object to Alternative 1 provided that appropriate buffers are implemented. CN proposed a minimum buffer of 30 m between any mining/processing activities and watercourses and wetlands, and a minimum buffer of at least 20 m between any mining/processing activities and natural vegetation.
- ✚ CN further stipulated that no cleared vegetation, alien species or other, may be dumped in areas containing indigenous vegetation.

#### **Land Use:**

- ✚ Langeberg Local Municipality (LLM) responded that the property is zoned Agricultural Zone 1 in terms of Section 8 Zoning Scheme Regulations. An application must be made for a temporary departure from the zoning provisions and no activities may commence without all relevant approvals.
- ✚ Upon closure of the site, the topsoil will be returned and the area will revert back to agricultural use. The cover crop to be used in the rehabilitation of the site will tie in with the activities of the landowner.

#### **Hydrology:**

- ✚ The proposed processing area will be more than 100m from any natural water source. The Department of Environmental Affairs and Development Planning requested confirmation regarding the presence of a watercourse across the proposed site. The

Klaasvoogds River Irrigation Board confirmed that no drainage line pass through the proposed study area.

- ✚ CapeNature added that storm water management and erosion prevention measures must be implemented on-site.
- ✚ Upon review of the DEIAR & EMPR BGCMA commented that the activities do not occur within the extent of a water course and are therefore not regarded as Water Use in terms of Section 21(c) & (i) of the National Water Act, 1998. No water use authorisation is therefore required.

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

- ✚ No area or artefact of cultural or heritage importance could be identified within 100 m of the proposed processing area, nor will the activity entail any below surface disturbance.

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

- ✚ The waste rock/stone to be processed at the area will be used in the ready mix plant of the applicant. Due to an increase in building and infrastructure development in the municipal area the need for ready mixed concrete increased in correspondence. By using the waste rock of the property the applicant will be able to obtain reasonable priced material that can be used in the ready mix production process. The applicant will also assist the landowner in removing unwanted waste rock from the perimeter of his fields. Rock that does not comply with size specifications for ready mix will be sold as base course or other material to contractors in the surrounding area.
- ✚ The proposed activity will not only assist the applicant and landowner but also indirectly contribute to the economy of the immediate municipal area and infrastructure development. The proposed activity will generate approximately five work opportunities that will be available to local residents.

#### **Existing Infrastructure:**

- ✚ It is expected that the proposed processing activity will have a very low impact on the surrounding environment as activities will be contained within the boundaries of the site and will entail the use of the waste rock/stone stockpiled on the property. The proposed footprint area will not require the building of any permanent structures. The proposed production of aggregate on the property will also reduce the amount of trucks delivering aggregate, from outside sources, to the ready-mix plant by approximately 100 trucks per month. This will have a direct positive impact on the traffic volumes of the surrounding roads.

**(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, indicating site activities attached as Appendix B.

**(iii) Summary of the positive and negative implications and risks of the proposed activity and identified alternatives;**

**The positive impacts associated with the project include:**

- + Work opportunities to five workers,
- + Reduction of approximately 100 trucks/month currently delivering aggregate to the read-mix plant.
- + Should Site Alternative 1 be approved an already transformed area can be used for the establishment of the processing activities, and no natural vegetation will be impacted on.
- + Contribution to the construction industry that is an important economic sector in the Cape Winelands District.
- + Opportunity to landowner to diversify income on the property as well as dispose of waste rock/stones on the perimeter of his fields.

**Associated Positive Impacts – Temporary Infrastructure:**

- + Low intensity site establishment
- + Easy movement of infrastructure as processing progress
- + Complete removal of infrastructure at closure of the mine

Additional negative impacts associated with the project that was deemed to have a Low – Medium or higher significance/risk includes:

- |  |                     |
|--|---------------------|
| + Visual intrusion due to the proposed project | <b>Low – Medium</b> |
| + Dust nuisance stemming from proposed project | <b>Low – Medium</b> |
| + Noise nuisance due to proposed activity      | <b>Low – Medium</b> |
| + Loss of natural vegetation (S2)              | <b>Medium</b>       |
| + Impact on the access roads                   | <b>Low – Medium</b> |

**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 authorisation.

Management Objectives	Responsibility	Management Role
Visual Aspect	<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>✚ Limit the height of the stockpiles to 3m to minimize the visual impact on the surrounding environment.</li> <li>✚ Remove all infrastructure upon rehabilitation of the processing area and return the area to its prior status.</li> </ul>
Dust Handling	<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>✚ 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>✚ Add water sprayers to the crushing infrastructure to control dust emissions from conveyor belts.</li> <li>✚ Dampen the stockpiles during periods of high wind spells.</li> <li>✚ Assess effectiveness of dust suppression equipment.</li> <li>✚ Limit speed on the access roads to 40km/h to prevent the generation of excess dust.</li> <li>✚ Spray gravel roads 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.</li> <li>✚ Implement fallout dust monitoring to ensure compliance with the fallout dust standards from the National Dust Control Regulations, 2013.</li> </ul>
Noise Handling	<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>✚ Limit all crushing and screening activities to daylight hours.</li> <li>✚ No crushing or screening allowed on Sundays.</li> <li>✚ Ensure that employees and staff conduct themselves in an acceptable manner while on site.</li> <li>✚ No loud music may be permitted at the processing area.</li> <li>✚ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.</li> <li>✚ Conduct a noise impact study if complaints with regard to boundary noise are received.</li> </ul>
Management of weed/invader plants	<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 a weed and invader plant management plan.</li> <li>✚ Control declared invader or exotic species on the rehabilitated areas.</li> </ul>

Management Objectives	Responsibility	Management Role
		<ul style="list-style-type: none"> <li>✚ Keep the temporary topsoil stockpiles free of weeds.</li> </ul>
Topsoil management	<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>✚ Strip and stockpile the upper 500 mm of the soil and protect as topsoil.</li> <li>✚ Remove topsoil at right angles to the slope to slow down surface runoff and prevent erosion.</li> <li>✚ Conduct topsoil stripping, stockpiling and re-spreading in a systematic way. Ensure topsoil is stockpiled for the minimum possible time.</li> <li>✚ Protect topsoil stockpiles against losses by water and wind erosion through the establishment of plants on the stockpiles.</li> <li>✚ Place topsoil stockpiles along the northern and western boundaries of the site. Topsoil heaps may not exceed 1.5 m in order to preserve microorganism within the topsoil.</li> <li>✚ Conduct the processing activity in accordance with the Best Practice Guideline for small-scale mining as stipulated by DWS.</li> </ul>
Protection of natural vegetation	<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 activities within the boundaries of the approved processing area.</li> <li>✚ Demarcate, signpost and manage the 20 m buffer area as no-go area around areas with natural vegetation.</li> <li>✚ Do not dump any cleared vegetation, alien species or other in areas containing indigenous vegetation.</li> </ul>
Fauna Management	<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>✚ 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> </ul>
Waste management	<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 no pollution of surface water or groundwater resources occur due to the activity.</li> <li>✚ Prevent storm water from any premises containing waste, or water containing waste emanating from industrial activities and premises discharging into a water resource. Contain polluted storm water.</li> <li>✚ Ensure regular vehicle maintenance only take place within the service bay area of the off-site workshop. If emergency repairs is needed on site ensure drip trays is present. Ensure all waste products are disposed of in a 200 liter closed container/bin inside the emergency service area.</li> <li>✚ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either</li> </ul>



Management Objectives	Responsibility	Management Role
		<p>for resale or for appropriate disposal at a recognized facility.</p> <ul style="list-style-type: none"> <li>✚ Clean spills immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognized facility. File proof.</li> <li>✚ Ensure the availability of suitable covered receptacles at all times and conveniently placed for the disposal of waste.</li> <li>✚ Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Collection must take place on a regular basis and disposal needs to be at the recognized landfill site at Robertson. Prevent refuse from being dumped on or near the processing area.</li> <li>✚ Biodegradable refuse to be handled as indicated above.</li> </ul>
Storm water management	<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>✚ Divert storm water around the processing and stockpile areas to prevent erosion.</li> <li>✚ Stockpile topsoil heaps along the northern and western boundaries of the study area to divert runoff water away from the processing area.</li> <li>✚ Weekly monitor the stockpiles and if any signs of erosion become apparent implement soil erosion protection measures.</li> <li>✚ Continuously monitor the effectiveness of the storm water infrastructure.</li> <li>✚ Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS.</li> </ul>
Management of access roads	<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>✚ Divert storm water around the access roads to prevent erosion.</li> <li>✚ Restrict vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas.</li> <li>✚ Repair rutting and erosion of the access roads caused by the proposed activities.</li> </ul>
After care on rehabilitated areas	<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>✚ Control run-off water via temporary banks to ensure that accumulation of run-off does not cause down-slope erosion.</li> <li>✚ Only do topsoil spreading 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 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>✚ Plant a cover crop immediately after spreading of topsoil, to stabilize the soil and</li> </ul>

Management Objectives	Responsibility	Management Role
		<p>protect it from erosion. Fertilize the cover crop for optimum production.</p> <ul style="list-style-type: none"> <li>✚ Ensure rehabilitation be taken up to the point of cover crop stabilization. Rehabilitation must not be considered complete until the first cover crop is well established.</li> <li>✚ Monitor all rehabilitated areas for erosion, and appropriately stabilized if any erosion occurs.</li> </ul>
Health and Safety Risk	<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 workers have access to the correct personal protection equipment (PPE) as required by law.</li> <li>✚ Manage all operations in compliance with the Occupational Health and Safety Act as well as the Mine Health and Safety Act.</li> <li>✚ Ensure the water provided for domestic use / human consumption comply with the SANS 241:2001 guidelines for drinking water. Regularly monitor to ensure compliance and inform the BGCMA and DoH if rectification measures was needed.</li> <li>✚ Ensure a buffer area of at least 100 m or above the 1:100 year flood line from the edge of any watercourse whether permanent or non-permanent is maintained when installing any type of sewerage disposal system.</li> </ul>
Protection of Cultural or Heritage Artefacts	<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>✚ Immediately stop work should any evidence of human burials or other heritage artefact be discovered during the execution of the activities.</li> <li>✚ Notify Heritage Western Cape (HWC) and the ECO immediately.</li> <li>✚ Work may only commence once the area was cleared by HWC.</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)

As explained under point g) *Motivation for preferred development footprint* the initial proposal was updated to incorporate the matters raised during the assessment process. This led to the final layout of infrastructure and activities on the overall site as shown in the final site map attached Appendix B:

- ✚ The establishment of the processing area proposed under Site Alternative 1 using temporary infrastructure.

**n) Aspects for inclusion as conditions of Authorisation.**

Any aspects, which have not formed part of the EMP that must be made conditions of the Environmental Authorisation

The management objectives listed in this report under *Point L Proposed impact management objectives* 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 applicant needs to submit an application for temporary departure from the zoning provisions in terms of the Land Use Planning Act 3/2014 and the Langeberg Municipal Land Use Bylaws 264/2015 prior to commencement of the proposed activities.

**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 property owner, as well as site inspections, and background information gathering. No uncertainty with regard to the proposed project or the receiving environment could be identified.

**p) Reasoned opinion as to whether the proposed activity should or should not be authorised**

**i) Reasons why the activity should be authorized or not.**

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

## ii) **Conditions that must be included in the authorisation**

### **(1) Specific conditions to be included into the compilation and approval of EMPr**

The management objectives listed in this report under *Point L Proposed impact management objectives* and listed below must be included into the compilation and approval of the EMPr:

- ✚ Visual Aspect
- ✚ Dust Handling
- ✚ Noise Handling
- ✚ Management of weed/invader plants
- ✚ Topsoil Management
- ✚ Protection of Natural Vegetation
- ✚ Fauna Management
- ✚ Waste Management
- ✚ Storm Water Management
- ✚ Management of Access Roads
- ✚ After Care on Rehabilitated Areas
- ✚ Health and Safety Risks
- ✚ Protection of Cultural of Heritage Artefacts

### **(2) Rehabilitation requirements**

The applicant must adhere to the following rehabilitation requirements:

1. Upon closure of the site all infrastructure and stockpiled material must be removed,
2. To ensure minimum impact on drainage, it is important that no depressions be left on the footprint area. A surface slope (even if minimal) must be maintained across the processing floor in the drainage direction, so that it will be free draining,
3. The stockpiled topsoil must then be evenly spread over the entire disturbed area to a depth of 500 mm. The depth must be monitored during spreading to ensure that coverage is adequate and even.
4. Topsoil spreading may only be done 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 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.
5. A cover crop must be planted and established immediately after spreading of topsoil to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. It is important that rehabilitation be taken up to the point of crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established.

6. The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs.
7. On-going alien vegetation control must keep the area free of alien vegetation after mining.

Final rehabilitation must entail the removal of all infrastructure and equipment from the site. Control of weeds and alien invasive plant species is an important aspect after topsoil replacement and seeding has been done in an area. Site management must implement an alien invasive plant management plan during the 12 months aftercare period to address germination of problem plants in the area.

**q) Period for which the Environmental Authorisation is required.**

The applicant requests the Environmental Authorisation to be valid for a seven year period to correspond with the maximum validity of the mining permit.

**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 necessary 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 annual amount required to manage and rehabilitate the environment was estimated to be R69 000. Please see the explanation as to how this amount was derived at attached as Appendix I – Financial and Technical Competence.

**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).

The processing operation will be self-funded through income generated by sales of the ready-mix, and will therefore be funded by CP Concrete (Pty) Ltd.

**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.**

N/A

**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 impact on socio-economic conditions of directly affected persons:

**✚ Visual intrusion associated with the establishment of the processing area and crushing and screening activities**

The footprint of the proposed processing area will be visible from the minor road passing the site as well as the higher laying areas to the north of the site. No permanent infrastructure will be established on site that could permanently affect the visual impact. The height of the stockpiles will be limited to 3 m to manage the visual impact and it is proposed that the orchard to the east of the proposed site will assist in screening the activities. The visual impact on the surrounding area is deemed to be of low significance. There will be no residual impact after closure as all the temporary infrastructure will be removed, and the area will be returned to its prior status to allow for agricultural use.

**✚ Dust nuisance caused by the disturbance of the soil, crushing activities and loading and transporting of material.**

Although the proposed operation requires no blasting or excavation the crusher plant may from time to time generate dust that could affect the air quality of the

surrounding environment. If needed dust suppression will be implemented on the crusher plant and access roads in order to control dust generation. The liberation of dust during the operational phase will be limited to the immediate vicinity and can be controlled through the spraying of water on the roads. Fallout dust monitoring must be implemented in order to ensure compliance of the site with the fallout dust standards from the National Dust Control Regulations, 2013. The impact on the surrounding area is deemed to be of low significant. There will be no residual impact after closure.

**✚ Noise nuisance caused by machinery stripping and stockpiling the topsoil, crushing activities.**

The noise to be generated at the proposed processing operation is expected to temporarily increase the noise levels of the area due to the operation of the crusher plant, and the loading and transportation of the material. The processing activity will contribute the noise generation of one Excavator, the Crusher Plant and approximately 5 – 10 Dumper trucks per day. The noise impact of the proposed activity is expected to be representative of noise generated by agricultural activities on the farm. The nearest residence is that of the applicant ( $\pm 800$  m) with the houses of the bordering residents being more than 1 km away from the proposed processing area. The significance of noise on the surrounding environment is therefore deemed to be of low significance. All activities will be contained to daylight hours and no crushing or screening will be done on Sundays.

**✚ Degradation of access roads**

The proposed production of aggregate on the property will reduce the amount of trucks delivering aggregate, from outside sources, to the ready-mix plant by approximately 100 trucks per month. This will have a direct positive impact on the traffic volumes of the surrounding roads. Rutting and erosion of the access road caused as a result of the processing activities will be repaired by the applicant.

**(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).

As the footprint of the proposed processing area falls over an area used for agricultural purposes no impact could be identified on the heritage environment.

**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 4**)

The site alternatives investigated during the impact assessment process were done at the hand of information obtained during the site investigation, public participation process, as well as desktop studies conducted of the study area. As discussed earlier the following alternatives were considered:

1. Site Alternative 1 – use of an area previously transformed by agricultural activities as footprint for the proposed processing area,
2. Site alternative 2 – use of an undisturbed natural area that falls onto Portion 3 and 19 of the farm Klaas Voogds Rivier 37,
3. No-go Alternative



## PART B

### ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

#### 1) Draft 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 Christine Fouche of Greenmined Environmental that acts as EAP on this project has been included in Part A Section 1(a) as well as Appendix M 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 draft 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 draft environmental management programme has been described and included in Part A, section (1)(h).

#### **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 Section (1) (L) (ii) this map has been compiled and is attached as Appendix B to this document.

#### **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 following closure objectives are proposed with regard to rehabilitation of the processing area:

1. Upon closure of the site all infrastructure and stockpiled material must be removed,
2. To ensure minimum impact on drainage, it is important that no depressions be left on the footprint area. A surface slope (even if minimal) must be maintained across the processing floor in the drainage direction, so that it will be free draining,
3. The stockpiled topsoil must then be evenly spread over the entire disturbed area to a depth of 500 mm. The depth must be monitored during spreading to ensure that coverage is adequate and even.
4. Topsoil spreading may only be done 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 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.

5. A cover crop must be planted and established immediately after spreading of topsoil to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. It is important that rehabilitation be taken up to the point of crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established.
6. The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs.
7. On-going alien vegetation control must keep the area free of alien vegetation after mining

Final rehabilitation must entail the removal of all infrastructure and equipment from the site. Control of weeds and alien invasive plant species is an important aspect after topsoil replacement and seeding has been done in an area. Site management must implement an alien invasive plant management plan during the 12 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:

- ✚ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed / alien clearing.
- ✚ All infrastructure, equipment, temporary equipment and other items used during the operational phase will be removed from the site (section 44 of the MPRDA).
- ✚ Waste material of any description, including receptacles, scrap, rubble and tires, will be removed entirely from the processing 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 activities.
- ✚ Species regarded as Category 1 weeds according to CARA (Conservation of Agricultural Recourses Act, 1983 – Act 43; Regulations 15 & 16 (as amended in March 2001) need to be eradicated from the site.
- ✚ Final rehabilitation shall be completed within a period specified by the Regional Manager.

**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 proposed processing activity, 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).

N/A

**iv) Steps taken to investigate, assess, and evaluate the impact of acid mine drainage.**

N/A

**v) Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage.**

N/A

**vi) Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage.**

N/A

**vii) Volumes and rate of water use required for the mining, trenching or bulk sampling operation.**

N/A

**viii) Has a water use license been applied for?**

The proposed project does not trigger the National Water Act and no water use license is required. The process water, needed during the operational phase, will be obtained from the existing water sources of the landowner (to be agreed upon by the applicant and landowner).

ix) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
(as listed in 2.11.1)	of operation in which activity will take place.  State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post closure	(volumes, tonnages and hectares or m <sup>2</sup> )	(describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	(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)	Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. 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 or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Demarcation of site with visible beacons	Construction / Site Establishment phase	4.9 ha	Demarcation of the site will ensure that all employees are aware of the boundaries of the processing area and that work stay within approved area.	Processing of the waste rock/stone is only allowed within the boundaries of the approved processing area. ⚡ MHSA, 1996 ⚡ OHSA, 1993	Beacons need to be in place throughout the life of the activity.
Establishment of mobile crusher and ablation infrastructure within boundaries of site.	Construction / Site Establishment phase	18 m <sup>2</sup>	Site management must ensure that infrastructure is erected within the boundaries of the approved processing area.	Compliance to standards stipulated in the: ⚡ MPRDA, 2008 ⚡ OHSA, 1993	Throughout operational phase
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>  &	Operational phase	4.9 ha	<b>Visual Mitigation:</b> ⚡ The site must have a neat appearance and be kept in good condition at all times. ⚡ The height of the stockpiles must be limited to 3 m to manage the visual impact on the surrounding environment.	<b>Land use zoning:</b> ⚡ Western Cape LUPA, 2014 ⚡ Langeberg Municipality: Land Use Planning Bylaws, 2015 ⚡ The property is zoned for agriculture as primary use.	Throughout operational phase

<p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p>			<ul style="list-style-type: none"> <li>✦ Upon rehabilitation of the processing area all infrastructure must be removed and the area must be returned to its prior status.</li> </ul>		
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p style="text-align: center;">&amp;</p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p style="text-align: center;">&amp;</p> <p><b>LOADING AND TRANSPORTING</b></p> <p style="text-align: center;">&amp;</p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Operational phase</p> <p style="text-align: center;">&amp;</p> <p>Decommissioning phase</p>	<p>4.9 ha</p>	<p><b><u>Dust Handling:</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, water spraying and/or other dust-allaying agents.</li> <li>✦ Water sprayers must be added to the crushing infrastructure to control dust emissions from the conveyor belts.</li> <li>✦ During periods of high wind spells, the stockpiles must be dampened to control dust emission.</li> <li>✦ The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> <li>✦ Speed on the access roads must be limited to 40km/h to prevent the generation of excess dust.</li> <li>✦ Gravel roads 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.</li> <li>✦ Fallout dust monitoring must be implemented in order to ensure compliance of the site with the fallout dust standards from the National Dust Control Regulations, 2013.</li> </ul>	<p><b><u>Dust Handling:</u></b></p> <ul style="list-style-type: none"> <li>✦ NEM:AQA, 2004 Regulation 6(1)</li> <li>✦ National Dust Control Regulations, 2013</li> </ul>	<p>Throughout operational and decommissioning phases</p>
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p style="text-align: center;">&amp;</p>	<p>Operational phase</p> <p style="text-align: center;">&amp;</p> <p>Decommissioning phase</p>	<p>4.9 ha</p>	<p><b><u>Noise Handling:</u></b></p> <ul style="list-style-type: none"> <li>✦ All crushing and screening activities must be limited to daylight hours, and no crushing or screening allowed on Sundays.</li> <li>✦ The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site.</li> </ul>	<p><b><u>Noise Handling:</u></b></p> <ul style="list-style-type: none"> <li>✦ NEM:AQA, 2004 Regulation 6(1)</li> <li>✦ All project related vehicles must be in a road worthy condition in terms of the Road Transport Act, 1987</li> </ul>	<p>Throughout operational and decommissioning phases</p>

<p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p><b>&amp;</b></p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>			<ul style="list-style-type: none"> <li>✚ No loud music may be permitted at the processing area.</li> <li>✚ All project-associated vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.</li> <li>✚ Should the permit holder receive complaints with regard to boundary noise a noise impact study has to be conducted by a qualified specialist.</li> </ul>		
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p><b>&amp;</b></p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Operational phase</p> <p><b>&amp;</b></p> <p>Decommissioning phase</p>	<p>4.9 ha</p>	<p><b><u>Management of weed- or invader plants:</u></b></p> <ul style="list-style-type: none"> <li>✚ A weed and invader plant management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).</li> <li>✚ Management must take responsibility to control declared invader or exotic species on the habilitated 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 with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide."</li> </ul> </li> <li>✚ The temporary topsoil stockpiles needs to be kept free of weeds.</li> </ul>	<p><b><u>Management of weed- or invader plants:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</li> </ul>	<p>Throughout operational and decommissioning phases</p>
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p>	<p>Operational phase</p>	<p>4.9 ha</p>	<p><b><u>Loss of topsoil due to incorrect storm water management</u></b></p> <ul style="list-style-type: none"> <li>✚ Storm water must be diverted around the topsoil heaps, processing and stockpile areas to prevent erosion.</li> </ul>	<p><b><u>Loss of topsoil due to incorrect storm water management:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEMA, 1998</li> <li>✚ NWA, 1998</li> </ul>	<p>Throughout operational phase</p>

			<ul style="list-style-type: none"> <li>✦ Topsoil heaps must be stockpiled along the northern and western boundaries of the study area to divert runoff water away from the processing area. Site management must weekly monitor the stockpiles and should any signs of erosion become apparent soil erosion protection measures must be implemented.</li> <li>✦ The effectiveness of the storm water infrastructure needs to be continuously monitored.</li> <li>✦ The activity must be conducted 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 of Mineral Resources may impose: <ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ Dirty water must be collected and contained in a system separate from the clean water system.</li> <li>▪ Dirty water must be prevented from spilling or seeping into clean water systems.</li> <li>▪ Storm water management must apply for the entire life cycle of the site and over different hydrological cycles (rainfall patterns).</li> <li>▪ The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into the storm water management.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✦ The replacement of the topsoil is of utmost importance to ensure the effective future use of the area for agricultural purposes.</li> </ul>	
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STRIPPING AND STOCKPILING OF TOPSOIL	Operational phase	4.9 ha	<p><b><u>Loss of natural vegetation (Site Alternative 1):</u></b></p> <ul style="list-style-type: none"> <li>✚ All activities must be contained within the boundaries of the approved processing area.</li> <li>✚ A 20 m buffer area needs to be demarcated; sign posted and managed as no-go area between the processing activities and areas with natural vegetation.</li> <li>✚ No cleared vegetation, alien species or other, may be dumped in areas containing indigenous vegetation.</li> </ul>	<p><b><u>Negative impact on biodiversity of the area (Site Alternative 1):</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:BA, 2004</li> </ul>	Throughout operational phase
STRIPPING AND STOCKPILING OF TOPSOIL	Operational phase	4.9 ha	<p><b><u>Loss of natural vegetation (Site Alternative 2):</u></b></p> <ul style="list-style-type: none"> <li>✚ The risk of the proposed processing activities of S2 having a negative impact on the natural vegetation of the footprint area cannot be reduced and is deemed to be of medium.</li> </ul>	<p><b><u>Negative impact on biodiversity of the area (Site Alternative 2):</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:BA, 2004</li> </ul>	Throughout operational phase
STRIPPING AND STOCKPILING OF TOPSOIL & CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE & LOADING AND TRANSPORTING	Operational phase	4.9 ha	<p><b><u>Negative impact on fauna that may enter the area:</u></b></p> <ul style="list-style-type: none"> <li>✚ The site manager must ensure that no fauna is caught, killed, harmed, sold or played with.</li> <li>✚ Workers must be instructed to report any animals that may be trapped in the working area.</li> <li>✚ No snares may be set or nests raided for eggs or young.</li> </ul>	<p><b><u>Negative impact on fauna that may enter the area:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:BA, 2004</li> <li>✚ Site management has to strive to eliminate the impact on fauna in the surrounding environment for the duration of the processing activities.</li> </ul>	Throughout operational phase
STRIPPING AND STOCKPILING OF TOPSOIL	Operational phase &	4.9 ha	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p>	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p>	Throughout operational and decommissioning phases



<p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>LOADING AND TRANSPORTING</b></p> <p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Decommissioning phase</p>		<ul style="list-style-type: none"> <li>✚ No pollution of surface water or ground water resources may occur due to any activity.</li> <li>✚ No storm water runoff from any premises containing waste, or water containing waste emanating from industrial activities and premises may be discharged into a water resource. Polluted storm water must be contained.</li> <li>✚ Regular vehicle maintenance may only take place at the existing workshop on the farm. If emergency repairs is needed 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 formal workshop in order to ensure proper disposal.</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>✚ Spills must be cleaned up immediately to the satisfaction of the Regional Manager of DMR by removing the spillage together with the polluted soil and by disposing it 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, collected on a weekly basis, and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or near the processing area.</li> <li>✚ Biodegradable refuse generated must be handled as indicated above.</li> </ul>	<ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>	
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<p><b>LOADING AND TRANSPORTING</b></p>	<p>Operational phase</p>	<p>Access road</p>	<p><b><u>Impact on the access roads:</u></b></p> <ul style="list-style-type: none"> <li>✚ Storm water must be diverted around the access roads to prevent erosion.</li> <li>✚ Vehicular movement must be restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.</li> <li>✚ The applicant must repair Rutting and erosion of the access road caused because of the processing activities.</li> </ul>	<p><b><u>Degradation of the gravel access road:</u></b></p> <ul style="list-style-type: none"> <li>✚ NRTA, 1996</li> <li>✚ The gravel access road needs to be monitored for signs of degradation. Should any signs become apparent immediate rectification action must be done.</li> </ul>	<p>Throughout operational phase</p>
<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Decommissioning phase</p>	<p>4.9 ha</p>	<p><b><u>Erosion of returned topsoil after rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ Storm water must be controlled via temporary banks to prevent run-off causing down-slope erosion.</li> <li>✚ Topsoil spreading may only be done at a time of year when vegetation cover can be established as quickly as possible. This will minimize erosion of returned topsoil by both rain and wind. 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 and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. 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 should any erosion occurs.</li> </ul>	<p><b><u>Erosion of returned topsoil after rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEM:BA, 2004</li> <li>✚ MPRDA, 2008</li> <li>✚ The replacement of the topsoil and sloping of the area is of utmost importance to ensure the effective future use of the area for agricultural purposes.</li> <li>✚ Rehabilitation cannot be considered complete until the first cover crop is well established.</li> </ul>	<p>Throughout decommissioning phase</p>

<p style="text-align: center;"><b>FINAL REHABILITATION</b></p>	<p style="text-align: center;">Decommissioning phase</p>	<p style="text-align: center;">4.9 ha</p>	<p><b><u>Final rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed / alien clearing.</li> <li>✚ All infrastructure, equipment, temporary equipment and other items used during the operational phase will be removed from the site (section 44 of the MPRDA).</li> <li>✚ Waste material of any description, including receptacles, scrap, rubble and tires, will be removed entirely from the area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.</li> <li>✚ Weed / Alien clearing will be done in a sporadic manner during the operational phase.</li> <li>✚ Species regarded as Category 1 weeds according to CARA (Conservation of Agricultural Recourses Act, 1983 – Act 43; Regulations 15 &amp; 16 (as amended in March 2001) need to be eradicated from the site.</li> <li>✚ Final rehabilitation shall be completed within a period specified by the Regional Manager.</li> </ul>	<p><b><u>Final Rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ MPRDA, 2008</li> <li>✚ Western Cape LUPA, 2014</li> <li>✚ Langeberg Municipality: Land Use Planning Bylaws, 2015</li> <li>✚ Final rehabilitation needs to be done within a period specified by the Regional Manager of DMR.</li> </ul>	<p style="text-align: center;">Throughout decommissioning phase</p>
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### e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ());

<b>ACTIVITY</b> whether listed or not listed  (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.)	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc..)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Demarcation of site with visible beacons	No impact could be identified other than the beacons being outside the boundaries of the approved processing area.	N/A	Construction / Site Establishment phase	Control through management and monitoring	Processing of the waste rock/stone is only allowed within the boundaries of the approved processing area. 🚧 MHSa, 1996 🚧 OHSa, 1993
Establishment of mobile crusher and ablution infrastructure within boundaries of site.	If the infrastructure is established within the boundaries of the approved processing area no impact could be identified.	N/A	Construction / Site Establishment phase	Control through management and monitoring	Compliance to standards stipulated in the: 🚧 MPRDA, 2008 🚧 OHSa, 1993 🚧 The infrastructure needs to be within the boundaries of the approved area. 🚧 The ablution facilities need to be kept clean and in working order. The supplier need to

					service the ablution facilities weekly.
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Visual impact due to removal of topsoil	The visual impact may affect the aesthetics of the landscape.	Operational phase	<u>Control:</u> Implementation of proper housekeeping	<u>Land use zoning:</u> <ul style="list-style-type: none"> <li>✚ Western Cape LUPA, 2014</li> <li>✚ Langeberg Municipality: Land Use Planning Bylaws, 2015</li> <li>✚ The property is zoned for agriculture as primary use.</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Loss of natural vegetation  (Site Alternative 1)	The loss of natural vegetation may affect the biodiversity of the surrounding environment.	Operational phase	<u>Control:</u> Management of buffer areas and demarcation of work areas	<u>Negative impact on biodiversity of the area (Site Alternative 1):</u> <ul style="list-style-type: none"> <li>✚ NEM:BA, 2004</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Loss of natural vegetation  (Site Alternative 2)	The loss of natural vegetation may affect the biodiversity of the surrounding environment.	Operational phase	<u>Modify:</u> Consider use of a less sensitive area	<u>Negative impact on biodiversity of the area (Site Alternative 2):</u> <ul style="list-style-type: none"> <li>✚ NEM:BA, 2004</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Dust nuisance caused by the disturbance of soil.	Dust will be contained within the property boundaries and will therefore affect only the landowner.	Operational phase	<u>Control:</u> Dust suppression	<u>Dust Handling:</u> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Noise nuisance caused by machinery stripping and stockpiling the topsoil.	The noise impact should be contained within the boundaries of the property and will represent the	Operational phase	<u>Control:</u> Noise control measures	<u>Noise Handling:</u> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ All project related vehicles must be in a road worthy condition in terms of the Road Transport Act, 1987</li> </ul>

		current noise levels of the site.			
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Infestation of the topsoil heaps by weeds and invader plants.	Biodiversity	Operational phase	<u>Control &amp; Remedy:</u> Implementation of weed control and the weed/invader plant management plan	<b><u>Management of weed- or invader plants:</u></b> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Loss of topsoil due to incorrect storm water management.	Loss of topsoil will affect the rehabilitation of the processing area and the future agricultural potential of the site.	Operational phase	<u>Control:</u> Storm water management	<b><u>Loss of topsoil due to incorrect storm water management:</u></b> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEMA, 1998</li> <li>✚ NWA, 1998</li> <li>✚ The replacement of the topsoil is of utmost importance to ensure the effective future use of the area for agricultural purposes.</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Operational phase	<u>Control:</u> Waste management	<b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b> <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>
<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Visual impact associated with the crushing and screening activities	The visual impact may affect the	Operational phase	<u>Control:</u> Implementation of proper housekeeping	<b><u>Land use zoning:</u></b> <ul style="list-style-type: none"> <li>✚ Western Cape LUPA, 2014</li> <li>✚ Langeberg Municipality: Land Use Planning Bylaws, 2015</li> </ul>

		aesthetics of the landscape.			<ul style="list-style-type: none"> <li>The property is zoned for agriculture as primary use.</li> </ul>
<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Dust nuisance due to crushing activities	Dust will be contained within the property boundaries and will therefore affect only the landowner.	Operational phase	<u>Control:</u> Dust suppression	<p><b>Dust Handling:</b></p> <ul style="list-style-type: none"> <li>NEM:AQA, 2004 Regulation 6(1)</li> <li>National Dust Control Regulations, 2013</li> </ul>
<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Noise nuisance generated by crushing activities	The noise impact should be contained within the boundaries of the property, and will relate to the existing equipment operating on-site.	Operational phase	<u>Control:</u> Noise management	<p><b>Noise Handling:</b></p> <ul style="list-style-type: none"> <li>NEM:AQA, 2004 Regulation 6(1)</li> <li>All project related vehicles must be in a road worthy condition in terms of the Road Transport Act, 1987</li> </ul>
<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Operational phase	<u>Control:</u> Waste management	<p><b>Contamination of surface or groundwater due to hazardous spills not cleaned:</b></p> <ul style="list-style-type: none"> <li>NWA, 1998</li> <li>NEM:WA, 2008</li> <li>Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>
<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Weeds and invader plant infestation of the area	Biodiversity	Operational phase	<u>Control &amp; Remedy:</u> Implementation of weed control	<p><b>Management of weed- or invader plants:</b></p> <ul style="list-style-type: none"> <li>CARA, 1983</li> <li>All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</li> </ul>

LOADING AND TRANSPORTING	Dust nuisance due to loading and transportation of the material	Should dust levels become excessive it may have an impact on surrounding landowners.	Operational phase	<u>Control:</u> Dust suppression	<p><b><u>Dust Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>
LOADING AND TRANSPORTING	Impact on the access roads	All road users will be affected	Operational phase	<u>Control &amp; Remedy:</u> Road management	<p><b><u>Degradation of the gravel access road:</u></b></p> <ul style="list-style-type: none"> <li>✚ NRTA, 1996</li> <li>✚ The gravel access road needs to be monitored for signs of degradation. Should any signs become apparent immediate rectification actions must be implemented.</li> </ul>
LOADING AND TRANSPORTING	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Operational phase	<u>Control:</u> Waste management	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p> <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>
SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA	Erosion of returned topsoil after rehabilitation	Soil erosion, may affect the agricultural potential of the site after closure of the mine.	Decommissioning phase	<u>Control:</u> Soil management	<p><b><u>Erosion of returned topsoil after rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEM:BA, 2004</li> <li>✚ MPRDA, 2008</li> <li>✚ The replacement of the topsoil and sloping of the area is of utmost importance to ensure the effective future use of the area for agricultural purposes.</li> </ul>



					<ul style="list-style-type: none"> <li>✚ Rehabilitation cannot be considered complete until the first cover crop is well established.</li> </ul>
<b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b>	Dust nuisance caused during landscaping activities	Should dust levels become excessive it may have an impact on surrounding landowners.	Decommissioning phase	<u>Control:</u> Dust suppression	<p><b><u>Dust Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>
<b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b>	Noise nuisance caused by machinery	Should noise levels become excessive it may have an impact on surrounding landowners.	Decommissioning phase	<u>Control:</u> Noise management	<p><b><u>Noise Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ All project related vehicles must be in a road worthy condition in terms of the Road Transport Act, 1987</li> </ul>
<b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b>	Contamination of area with hazardous waste materials	Contamination may cause surface or ground water pollution if not addressed	Decommissioning phase	<u>Control:</u> Waste management	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p> <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>
<b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b>	Loss of reinstated topsoil due to the absence of vegetation	Loss of topsoil will affect the rehabilitation of the processing area and the future agricultural potential of the site.	Decommissioning phase	<u>Control:</u> Storm water management	<p><b><u>Erosion of returned topsoil after rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEM:BA, 2004</li> <li>✚ MPRDA, 2008</li> <li>✚ The replacement of the topsoil and sloping of the area is of</li> </ul>

					<p>utmost importance to ensure the effective future use of the area for agricultural purposes.</p> <ul style="list-style-type: none"> <li>Rehabilitation cannot be considered complete until the first cover crop is well established.</li> </ul>
<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Weeds and invader plant infestation of the area</p>	<p>Biodiversity</p>	<p>Decommissioning phase</p>	<p><u>Control &amp; Remedy:</u> Implementation of weed control</p>	<p><b><u>Management of weed- or invader plants:</u></b></p> <ul style="list-style-type: none"> <li>CARA, 1983</li> <li>All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</li> </ul>

## 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).

<b>ACTIVITY</b> whether listed or not listed  (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.)	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc..)	<b>TIME PERIOD FOR IMPLEMENTATION</b>  Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. 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 Or . Upon the cessation of mining bulk sampling or alluvial diamond prospecting as the case may be.	<b>COMPLIANCE WITH STANDARDS</b>  (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Demarcation of site with visible beacons	No impact could be identified other than the beacons being outside the boundaries of the approved processing area.	Control through management and monitoring	Beacons need to be in place throughout the life of the mine.	Processing of the waste rock/stone is only allowed within the boundaries of the approved processing area. 🚧 MHSa, 1996 🚧 OHSa, 1993
Establishment of mobile crusher and ablution infrastructure within boundaries of site.	If the infrastructure is established within the boundaries of the approved processing area no impact could be identified.	Control through management and monitoring	Site establishment and operational phase	Compliance to standards stipulated in the: 🚧 MPRDA, 2008 🚧 OHSa, 1993

<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Visual impact due to removal of topsoil.	<u>Control:</u> Implementation of proper housekeeping	Throughout operational phase	<u>Land use zoning:</u> <ul style="list-style-type: none"> <li>✚ Western Cape LUPA, 2014</li> <li>✚ Langeberg Municipality: Land Use Planning Bylaws, 2015</li> <li>✚ The property is zoned for agriculture as primary use.</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Loss of natural vegetation (Site Alternative 1)	<u>Control:</u> Management of buffer areas and demarcation of work areas	Throughout operational phase	<u>Negative impact on biodiversity of the area (Site Alternative 1):</u> <ul style="list-style-type: none"> <li>✚ NEM:BA, 2004</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Loss of natural vegetation (Site Alternative 2)	<u>Modify:</u> Consider use of a less sensitive area	Throughout operational phase	<u>Negative impact on biodiversity of the area (Site Alternative 2):</u> <ul style="list-style-type: none"> <li>✚ NEM:BA, 2004</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Dust nuisance caused by the disturbance of soil.	<u>Control:</u> Dust suppression	Throughout operational phase	<u>Dust Handling:</u> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Noise nuisance caused by machinery stripping and stockpiling the topsoil	<u>Control:</u> Noise control measures	Throughout operational phase	<u>Noise Handling:</u> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ All project related vehicles must be in a road worthy condition in terms of the Road Transport Act, 1987</li> </ul>
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Infestation of the topsoil heaps by weeds and invader plants.	<u>Control &amp; Remedy:</u> Implementation of weed control and weed/invader plant management plan	Throughout operational phase	<u>Management of weed- or invader plants:</u> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</li> </ul>

<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p>	<p>Loss of topsoil due to incorrect storm water management</p>	<p><u>Control:</u> Storm water management</p>	<p>Throughout operational phase</p>	<p><b><u>Loss of topsoil due to incorrect storm water management:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEMA, 1998</li> <li>✚ NWA, 1998</li> <li>✚ The replacement of the topsoil is of utmost importance to ensure the effective future use of the area for agricultural purposes</li> </ul>
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p>	<p>Contamination of area with hazardous waste materials</p>	<p><u>Control:</u> Waste management</p>	<p>Throughout operational phase</p>	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p> <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>
<p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p>	<p>Visual impact associated with the crushing and screening activities</p>	<p><u>Control:</u> Implementation of proper housekeeping</p>	<p>Throughout operational phase</p>	<p><b><u>Land use zoning:</u></b></p> <ul style="list-style-type: none"> <li>✚ Western Cape LUPA, 2014</li> <li>✚ Langeberg Municipality: Land Use Planning Bylaws, 2015</li> <li>✚ The property is zoned for agriculture as primary use.</li> </ul>
<p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p>	<p>Dust nuisance from denuded areas</p>	<p><u>Control:</u> Dust suppression</p>	<p>Throughout operational phase</p>	<p><b><u>Dust Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>
<p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p>	<p>Noise nuisance generated by crushing activities</p>	<p><u>Control:</u> Noise management</p>	<p>Throughout operational phase</p>	<p><b><u>Noise Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ All project related vehicles must be in a road worthy condition in</li> </ul>

				terms of the Road Transport Act, 1987
<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Contamination of area with hazardous waste materials	<u>Control:</u> Waste management	Throughout operational phase	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p> <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent groundwater contamination. The precautionary principal must apply.</li> </ul>
<b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b>	Weeds and invader plant infestation of the area	<u>Control &amp; Remedy:</u> Implementation of weed control	Throughout operational phase	<p><b><u>Management of weed- or invader plants:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</li> </ul>
<b>LOADING AND TRANSPORTING</b>	Dust nuisance due to loading and transportation of the material	<u>Control:</u> Dust suppression	Throughout operational phase	<p><b><u>Dust Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>
<b>LOADING AND TRANSPORTING</b>	Impact on the access roads	<u>Control &amp; Remedy:</u> Road management	Throughout operational phase	<p><b><u>Degradation of the gravel access road:</u></b></p> <ul style="list-style-type: none"> <li>✚ NRTA, 1996</li> <li>✚ The gravel access road needs to be monitored for signs of degradation. Should any signs become apparent immediate rectification actions must be implemented.</li> </ul>

<p><b>LOADING AND TRANSPORTING</b></p>	<p>Contamination of area with hazardous waste materials</p>	<p><u>Control:</u> Waste management</p>	<p>Throughout operational phase</p>	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p> <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>
<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Erosion of returned topsoil after rehabilitation</p>	<p><u>Control:</u> Soil management</p>	<p>Throughout decommissioning phase</p>	<p><b><u>Erosion of returned topsoil after rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEM:BA, 2004</li> <li>✚ MPRDA, 2008</li> <li>✚ The replacement of the topsoil and sloping of the area is of utmost importance to ensure the effective future use of the area for agricultural purposes.</li> <li>✚ Rehabilitation cannot be considered complete until the first cover crop is well established.</li> </ul>
<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Dust nuisance caused during landscaping activities</p>	<p><u>Control:</u> Dust suppression</p>	<p>Throughout decommissioning phase</p>	<p><b><u>Dust Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>
<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Noise nuisance caused by machinery</p>	<p><u>Control:</u> Noise management</p>	<p>Throughout decommissioning phase</p>	<p><b><u>Noise Handling:</u></b></p> <ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ All project related vehicles must be in a road worthy condition in terms of the Road Transport Act, 1987.</li> </ul>

<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Contamination of area with hazardous waste materials</p>	<p><u>Control:</u> Waste management</p>	<p>Throughout decommissioning phase</p>	<p><b><u>Contamination of surface or groundwater due to hazardous spills not cleaned:</u></b></p> <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>
<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Loss of reinstated topsoil due to the absence of vegetation</p>	<p><u>Control:</u> Storm water management</p>	<p>Throughout decommissioning phase</p>	<p><b><u>Erosion of returned topsoil after rehabilitation:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEM:BA, 2004</li> <li>✚ MPRDA, 2008</li> <li>✚ The replacement of the topsoil and sloping of the area is of utmost importance to ensure the effective future use of the area for agricultural purposes.</li> <li>✚ Rehabilitation cannot be considered complete until the first cover crop is well established.</li> </ul>
<p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Weeds and invader plant infestation of the area</p>	<p><u>Control &amp; Remedy:</u> Implementation of weed control</p>	<p>Throughout decommissioning phase</p>	<p><b><u>Management of weed- or invader plants:</u></b></p> <ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</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 closure objectives entail the landscaping and replacement of the topsoil over the processing area in order to rehabilitate the disturbance. The stockpiled topsoil will be spread over the disturbed area to a depth of at least 500 mm.

Final rehabilitation will entail the removal of all infrastructure and equipment from the site. Final landscaping, levelling and top dressing will be done on all areas. Control of weeds and alien 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 management plan during the 12 months aftercare period to address germination of problem plants in the area. The applicant will comply with the minimum closure objectives as prescribed by DMR.

- (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 has been available for perusal by the landowner, I&AP's and stakeholders. All the comments received on the draft reports (DSR and DEIAR & EMPR) has been 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 requested rehabilitation plan is attached as Appendix D.

**(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 processing site. Final landscaping, levelling and top dressing will be done on all areas not yet rehabilitated. The rehabilitation of the processing area as indicated on the rehabilitation plan attached as Appendix D will comply with the minimum closure objectives as prescribed by DMR and detailed below, and therefore is deemed to be compatible:

1. Upon closure of the site all infrastructure and stockpiled material must be removed,
2. To ensure minimum impact on drainage, it is important that no depressions be left on the footprint area. A surface slope (even if minimal) must be maintained across the processing floor in the drainage direction, so that it will be free draining,
3. The stockpiled topsoil must then be evenly spread over the entire disturbed area to a depth of 500 mm. The depth must be monitored during spreading to ensure that coverage is adequate and even.
4. Topsoil spreading may only be done 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 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.
5. A cover crop must be planted and established immediately after spreading of topsoil to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. It is important that rehabilitation be taken up to the point of crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established.
6. The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs.
7. On-going alien vegetation control must keep the area free of alien vegetation after mining
8. Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed / alien clearing.

9. All infrastructure, equipment, temporary equipment and other items used during the operational phase will be removed from the site (section 44 of the MPRDA).
10. Waste material of any description, including receptacles, scrap, rubble and tires, will be removed entirely from the processing area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
11. Weed / Alien clearing will be done in a sporadic manner during operational phase.
12. Species regarded as Category 1 weeds according to CARA (Conservation of Agricultural Recourses Act, 1983 – Act 43; Regulations 15 & 16 (as amended in March 2001) need to be eradicated from the site.
13. Final rehabilitation shall be completed within a period specified by the Regional Manager.

**(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.

**Mine type and saleable mineral by-product**

**According to Tables B.12, B.13 and B.14**

Mine type	Rock/Stone
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
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**Level of information**

According to Step 4.2:

Level of information available	Extensive
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**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		NO
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		NO

### Unit rates for closure components

According to Table B.6, master rates and multiplication factors for applicable closure components.

Component No.	Main description	Master rate	Multiplication factor
1	Dismantling of <b>processing plant and related structures</b> (including overland conveyors and power lines)		
2(A)	Demolition of <b>steel buildings and structures</b>		
2(B)	Demolition of <b>reinforced concrete buildings and structures</b>		
3	Rehabilitation of <b>access roads</b>		
4(A)	Demolition and rehabilitation of <b>electrified railway lines</b>		
4(B)	Demolition and rehabilitation of <b>non-electrified railway lines</b>		
5	Demolition of <b>housing and facilities</b>		
6	<b>Opencast rehabilitation</b> including final voids and ramps		
7	Sealing of <b>shafts, adits and inclines</b>		
8(A)	Rehabilitation of <b>overburden and spoils</b>		
8(B)	Rehabilitation of <b>processing waste deposits and evaporation ponds (basic, salt-producing)</b>		
8(C)	Rehabilitation of <b>processing waste deposits and evaporation ponds (acidic, metal-rich)</b>		
9	Rehabilitation of <b>subsidied areas</b>		
10	<b>General surface rehabilitation</b> , including grassing of all denuded areas	105 842	1
11	<b>River diversions</b>		
12	<b>Fencing</b>		
13	<b>Water management</b> (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)		
14	2 to 3 years of <b>maintenance and aftercare</b>		

### Determine weighting factors

According to Tables B.7 and B.8

Weighting factor 1: Nature of terrain/accessibility	1.00
Weighting factor 2: Proximity to urban area where goods and services are to be supplied	1.05

## Calculation of closure costs

**Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision**

CALCULATION OF THE QUANTUM							
Mine:	Portion 3 of the farm Klaas Voogds Rivier 37			Location:	Robertson		
Evaluators:	C Fouche			Date:	2016-05-07		
No	Description	Unit	A Quantity	B Master rate	C Multiplication factor	D Weighting factor 1	E=A *B*C*D Amount (Rand)
			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	14	1	1	R 0.00
2(A)	Demolition of steel buildings and structures	m <sup>2</sup>	0	191	1	1	R 0.00
2(B)	Demolition of reinforced concrete buildings and structures	m <sup>2</sup>	0	282	1	1	R 0.00
3	Rehabilitation of access roads	m <sup>2</sup>	0	34	1	1	R 0.00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	332	1	1	R 0.00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	181	1	1	R 0.00
5	Demolition of housing and/or administration facilities	m <sup>2</sup>	0	383	1	1	R 0.00
6	Opencast rehabilitation including final voids and ramps	ha	0	200 415	0.04	1	R 0.00
7	Sealing of shaft, audits and inclines	m <sup>3</sup>	0	103	1	1	R 0.00
8(A)	Rehabilitation of overburden and spoils	ha	0	133 610	1	1	R 0.00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	0	166 408	1	1	R 0.00
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	483 329	0.51	1	R 0.00
9	Rehabilitation of subsided areas	ha	0	111 878	1	1	R 0.00
10	General surface rehabilitation	ha	4.9	105 842	1	1	R 518 625.80
11	River diversions	ha	0	105 842	1	1	R 0.00

12	Fencing	m	0	121	1	1	R 0.00
13	Water Management	ha	0	40 244	0.17	1	R 0.00
14	2 to 3 years of maintenance and aftercare	ha	0	14 085	1	1	R 0.00
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 518 625.80
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1.05		R 518 625.80		<b>Sub Total 1</b>	R 544 557.09

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00					R 32 673.43
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00					-
2	Contingency	10.0% of Subtotal 1					R 54 455.71
<b>Sub Total 2</b>							
(Subtotal 1 plus management and contingency)						R 631 686.22	
Vat (14%)						R 88 436.07	
GRAND TOTAL							
(Subtotal 3 plus VAT)						<b>R 720 122.30</b>	

The amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum total of R 720 122.30.

**(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 applicant 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**

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES <small>(FOR THE EXECUTION OF THE MONITORING PROGRAMMES)</small>	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Demarcation of site with visible beacons	Maintenance of beacons	<ul style="list-style-type: none"> <li>✚ Visible beacons need to be established at the corners of the processing area.</li> <li>✚ A 20 m buffer area (if applicable) from any natural areas need to be demarcated.</li> <li>✚ A 30 m buffer area from a watercourse needs to be demarcated if applicable.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Ensure beacons are in place throughout the life of the activity.</li> </ul>	<p>Throughout 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>
Establishment of mobile crusher and ablation infrastructure within boundaries of site.	<ul style="list-style-type: none"> <li>✚ All infrastructure to be established inside the boundaries of the processing area.</li> <li>✚ Waste monitoring programme to be implemented</li> </ul>	<ul style="list-style-type: none"> <li>✚ Crushing infrastructure and chemical toilet to be placed inside the boundaries of the approved area.</li> <li>✚ Waste disposal spreadsheets to be completed throughout operational phase and proof of safe disposal filed for auditing purposes.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul>	<p>Throughout Construction 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>



			<p>Role:</p> <ul style="list-style-type: none"> <li>✚ Contain all activities to the approved boundaries of the area.</li> <li>✚ Ensure proper waste management at the site.</li> </ul>	
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p>	Monitoring of visual impacts	<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>✚ Limit the height of the stockpiles to 3 m to minimize the visual impact on the surrounding environment.</li> <li>✚ Remove all infrastructure upon rehabilitation of the processing area and return the area to its prior status.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Minimize the visual impact of the activity on the surrounding environment.</li> </ul>	<p>Throughout 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>
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p><b>&amp;</b></p> <p><b>LOADING AND TRANSPORTING</b></p> <p><b>&amp;</b></p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF</b></p>	<p>Dust Monitoring:</p> <ul style="list-style-type: none"> <li>✚ The dust generated by the processing activities must be continuously monitored, and addressed by the implementation of dust suppression methods.</li> </ul>	<p>Dust Handling and Monitoring:</p> <ul style="list-style-type: none"> <li>✚ Dust suppression equipment such as a water car and water dispenser. The applicant already has this equipment available.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</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>✚ Add water sprayers to the crushing infrastructure to control dust emissions from conveyor belts.</li> <li>✚ Dampen the stockpiles during periods of high wind spells.</li> <li>✚ Assess effectiveness of dust suppression equipment.</li> </ul>	<p>Throughout Construction, Operational and 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>

<p><b>TOPSOIL OVER DISTURBED AREA</b></p>			<ul style="list-style-type: none"> <li>✚ Limit speed on the access roads to 40km/h to prevent the generation of excess dust.</li> <li>✚ Spray gravel roads 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.</li> <li>✚ Implement fallout dust monitoring to ensure compliance with the fallout dust standards from the National Dust Control Regulations, 2013.</li> </ul>	
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p><b>&amp;</b></p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Noise Monitoring</p> <ul style="list-style-type: none"> <li>✚ The noise impact should be contained within the boundaries of the property, as it will represent the current activities.</li> </ul>	<p>Noise Handling and Monitoring:</p> <ul style="list-style-type: none"> <li>✚ Site manager to ensure that the vehicles are equipped with silencers and maintained in a road worthy condition.</li> <li>✚ Compliance with the appropriate legislation with respect to noise will be mandatory.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Limit all crushing and screening activities to daylight hours.</li> <li>✚ No crushing or screening allowed over Sundays.</li> <li>✚ Ensure that employees and staff conduct themselves in an acceptable manner while on site.</li> <li>✚ No loud music may be permitted at the processing area.</li> <li>✚ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.</li> <li>✚ Conduct a noise impact study if complaints with regard to boundary noise are received.</li> </ul>	<p>Throughout Construction, Operational and 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>

<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p><b>&amp;</b></p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Management of weed or invader plants</p> <ul style="list-style-type: none"> <li>The presence of weed and/or invader plants must be continuously monitored, and any unwanted plants must be removed.</li> </ul>	<p>Management of weed or invader plants:</p> <ul style="list-style-type: none"> <li>Removal of weeds must be manually or by the use of an approved herbicide.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>Implement a weed and invader plant management plan.</li> <li>Control declared invader or exotic species on the rehabilitated areas.</li> <li>Keep the temporary topsoil stockpiles free of weeds.</li> </ul>	<p>Throughout Operational and 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>
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Topsoil management</p>	<p>Topsoil Handling:</p> <ul style="list-style-type: none"> <li>Excavating equipment to remove the first 500 mm of topsoil from the proposed work areas. The applicant already has this equipment available.</li> <li>Berms to be made to direct storm- and runoff water around the stockpiled topsoil area.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>Strip and stockpile the upper 500 mm of the soil and protect as topsoil.</li> <li>Remove topsoil at right angles to the slope to slow down surface runoff and prevent erosion.</li> <li>Conduct topsoil stripping, stockpiling and re-spreading in a systematic way. Ensure topsoil is stockpiled for the minimum possible time.</li> <li>Protect topsoil stockpiles against losses by water and wind erosion through the establishment of plants on the stockpiles.</li> </ul>	<p>Throughout Construction, Operational and 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>✚ Topsoil heaps may not exceed 1.5 m in order to preserve microorganism within the topsoil.</li> <li>✚ Conduct the activity in accordance with the Best Practice Guideline for small-scale mining as stipulated by DWS.</li> </ul>	
<b>STRIPPING AND STOCKPILING OF TOPSOIL</b>	Loss of natural vegetation	<p>Management of buffer areas:</p> <ul style="list-style-type: none"> <li>✚ Site management has to ensure the use of visible beacons to demarcate the boundaries of the approved area.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Contain all activities within the boundaries of the approved processing area.</li> <li>✚ Demarcate, signpost and manage the 20 m buffer area as no-go area around areas with natural vegetation.</li> <li>✚ Do not dump any cleared vegetation, alien species or other in areas containing indigenous vegetation.</li> </ul>	<p>Throughout Construction, Operational and 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>
<b>STRIPPING AND STOCKPILING OF TOPSOIL &amp; CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE &amp; LOADING AND TRANSPORTING</b>	Protection of fauna	<p>Protection of fauna:</p> <ul style="list-style-type: none"> <li>✚ Site management has to protect fauna that enters the processing area.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Ensure no fauna is caught, killed, harmed, sold or played with.</li> <li>✚ Instruct workers to report any animals that may be trapped in the working area.</li> </ul>	<p>Throughout Construction, Operational and 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>Ensure no snares are set or nests raided for eggs or young.</li> </ul>	
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p><b>&amp;</b></p> <p><b>LOADING AND TRANSPORTING</b></p> <p><b>&amp;</b></p> <p><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Waste Management:</p> <ul style="list-style-type: none"> <li>Management of waste must be a daily monitoring activity.</li> <li>Hydrocarbon spills need to be cleaned immediately and the site manager must check compliance daily.</li> </ul>	<p>Waste Management:</p> <ul style="list-style-type: none"> <li>Closed containers for the storage of general of hazardous waste until waste is removed to the appropriate landfill site.</li> <li>A hydrocarbon spill kit to enable sufficient cleanup of contaminated areas.</li> <li>Drip trays must be available to place underneath equipment parked for the night.</li> <li>Should a vehicle have a break down, it must be decommissioned immediately and removed from site to be serviced.</li> <li>Waste disposal register and file for the keeping of safe disposal records.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>Ensure that no pollution of surface water or groundwater resources occur due to the activity.</li> <li>Prevent storm water from any premises containing waste, or water containing waste emanating from industrial activities and premises discharging into a water resource. Contain polluted storm water.</li> <li>Ensure regular vehicle maintenance only take place within the service bay area of the off-site workshop. If emergency repairs is needed on site ensure drip trays is present. Ensure all waste products are disposed of in a 200 liter closed container/bin inside the emergency service area.</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>Clean spills immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognized facility. File proof.</li> </ul>	<p>Throughout Operational and 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>✚ Ensure the availability of suitable covered receptacles at all times and conveniently placed for the disposal of waste.</li> <li>✚ Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Collection must take place on a regular basis and waste must be disposed of at the recognized landfill site at Robertson. Prevent refuse from being dumped on or near the processing area.</li> <li>✚ Biodegradable refuse to be handled as indicated above.</li> </ul>	
<b>LOADING AND TRANSPORTING</b>	<p>Management of Access Roads</p> <ul style="list-style-type: none"> <li>✚ The condition of the access road must be continuously monitored.</li> </ul>	<p>Management of Access Roads:</p> <ul style="list-style-type: none"> <li>✚ Dust suppression equipment such as a water car and dispenser.</li> <li>✚ Grader to restore the road surface when needed.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Divert storm water around the access roads to prevent erosion.</li> <li>✚ Restrict vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas.</li> <li>✚ Repair rutting and erosion of the access roads caused by the processing activities.</li> </ul>	<p>Throughout Construction, Operational and 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>
<b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b>	<p>Soil erosion:</p> <ul style="list-style-type: none"> <li>✚ Loss of reinstated topsoil after rehabilitation.</li> </ul>	<p>Erosion monitoring:</p> <ul style="list-style-type: none"> <li>✚ Grader to restore areas prone to soil erosion.</li> <li>✚ Planting of a cover crop to stabilize reinstated soil</li> <li>✚ Erosion prevention equipment.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul>	<p>Throughout Construction, Operational and 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>

			<p>Role:</p> <ul style="list-style-type: none"> <li>✚ Control run-off water via temporary banks to ensure that accumulation of run-off does not cause down-slope erosion.</li> <li>✚ Only do topsoil spreading 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 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>✚ Plant a cover crop immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. Fertilize the cover crop for optimum production.</li> <li>✚ Ensure rehabilitation be taken up to the point of cover crop stabilization. Rehabilitation must not be considered complete until the first cover crop is well established.</li> <li>✚ Monitor all rehabilitated areas for erosion, and appropriately stabilized if any erosion occurs.</li> </ul>	
<p><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p><b>&amp;</b></p> <p><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p>	Health and safety risk	<p>Health and safety Management:</p> <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.</li> </ul>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Ensure workers have access to the correct personal protection equipment (PPE) as required by law.</li> </ul>	<p>Throughout Construction, Operational and 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>

<p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>LOADING AND TRANSPORTING</b></p> <p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>			<ul style="list-style-type: none"> <li>✚ Manage all operations in compliance with the Occupational Health and Safety Act as well as the Mine Health and Safety Act.</li> <li>✚ Ensure the water provided for domestic use / human consumption comply with the SANS 241:2001 guidelines for drinking water. Regularly monitor to ensure compliance and inform the BGCMA and DoH if rectification measures was needed.</li> <li>✚ Ensure a buffer area of at least 100 m or above the 1:100 year flood line from the edge of any watercourse whether permanent or non-permanent is maintained when installing any type of sewerage disposal system.</li> </ul>	
<p style="text-align: center;"><b>STRIPPING AND STOCKPILING OF TOPSOIL</b></p> <p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>CRUSHING AND SCREENING OF STOCKPILED ROCK/STONE</b></p> <p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>LOADING AND TRANSPORTING</b></p> <p style="text-align: center;">&amp;</p> <p style="text-align: center;"><b>SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA</b></p>	<p>Protection of Cultural and Heritage Artefacts</p>	<p>Should any artefacts be discovered the area needs to be demarcated and work needs to be stopped.</p>	<p>Responsibility:</p> <ul style="list-style-type: none"> <li>✚ Site Manager to ensure compliance with the guidelines as stipulated in the EMPr.</li> <li>✚ Compliance to be monitored by the Environmental Control Officer.</li> </ul> <p>Role:</p> <ul style="list-style-type: none"> <li>✚ Immediately stop work should any evidence of human burials or other heritage artefact be discovered during the execution of the activities.</li> <li>✚ Notify Heritage Western Cape (HWC) and the ECO immediately.</li> <li>✚ Work may only commence once the area was cleared by HWC.</li> </ul>	<p>Throughout Construction, Operational and 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>



**l) Indicate the frequency of the submission of the performance assessment report.**

The Mineral and Petroleum Resources Development Regulations stipulates that performance assessment reporting should be done annually. The applicant commits to submitting the performance assessment reports of the proposed processing activity annually to DMR for perusal. These performance assessments will be done in compliance with the provisions of Regulation 34 of the NEMA EIA Regulations, 2014 pertaining to auditing of environmental authorisation and associated documents.

**m) Environmental Awareness Plan**

**(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.**

Once the processing activity starts, a copy of the Environmental Management Programme will be handed to the site manager during the site establishment meeting. Issues such as topsoil handling, site clearance, fire principals and hazardous waste handling will be discussed.

An induction meeting will be held with all the site workers to inform them of the Basic Rules of Conduct with regard to the environment.

**(2) 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 activity takes place. An Environmental Control Officer needs to check compliance of the processing 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 carrying out 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
- Keep waste separate into labelled containers – report full bins
- 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
  - 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

**(3) Specific information required by the Competent Authority**

(Among others, confirm that the financial provision will be reviewed annually).

The applicant undertakes to annually review and update the financial provision calculation, upon which it will be submitted to DMR for review and approved as being sufficient to cover the environmental liability at the time and for closure of the project 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;

**-END-**

**LIST OF APPENDICES:**

Appendix A	Regulation 2.2 Mine Map
Appendix B	Site Activities Plan
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# APPENDIX A

## REGULATION 2.2 MAP





# APPENDIX B

## ACTIVITIES MAP







# APPENDIX C

## LAND USE MAP





# APPENDIX D

## REHABILITATION PLAN





# APPENDIX E

## LANDOWNER CONSENT





# APPENDIX F

## COMMENTS AND RESPONSE REPORT







**APPENDIX G**  
**SUPPORTING IMPACT ASSESSMENT**



## ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, herewith please receive an environmental impact statement that summarises the impact that the proposed activity may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

<u>TYPE OF IMPACT</u>	<u>DURATION</u>	<u>LIKELIHOOD</u>	<u>SIGNIFICANCE</u>
<p><u>Stripping and Stockpiling of Topsoil:</u></p> <ul style="list-style-type: none"> <li>✚ Visual intrusion associated with the establishment of the processing area,</li> <li>✚ Loss of natural vegetation (Site Alternative 1)</li> <li>✚ Loss of natural vegetation (Site Alternative 2)</li> <li>✚ Dust nuisance caused by disturbance of soil,</li> <li>✚ Noise nuisance caused by machinery stripping and stockpiling the topsoil,</li> <li>✚ Infestation of the topsoil heaps by weeds and invader plants,</li> <li>✚ Loss of topsoil due to incorrect storm water management,</li> <li>✚ Contamination of area with hydrocarbons or hazardous waste materials.</li> </ul>	<p><b>Site establishment phase</b></p>	<p>Low Possibility</p> <p>Low Possibility</p> <p>Definite</p> <p>Possible</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p>	<p>Low-Medium Concern</p> <p>Low Concern</p> <p>Medium Concern</p> <p>Low – Medium Concern</p> <p>Low Concern</p> <p>Low Concern</p> <p>Low – Medium Concern</p> <p>Low – Medium Concern</p>
<p><u>Crushing and Screening of Stockpiled Rock/Stone:</u></p> <ul style="list-style-type: none"> <li>✚ Visual intrusion associated with the crushing and screening activities,</li> <li>✚ Dust nuisance due to crushing activities,</li> <li>✚ Noise nuisance generated by crushing activities,</li> <li>✚ Contamination of area with hydrocarbons or hazardous waste materials,</li> <li>✚ Weeds an invader plant infestation of the area.</li> </ul>	<p><b>Duration of operational phase (7 years maximum)</b></p>	<p>Definite</p> <p>Low Possibility</p> <p>Possible</p> <p>Low Possibility</p> <p>Low Possibility</p>	<p>Medium Concern</p> <p>Low Concern</p> <p>Low-Medium Concern</p> <p>Low Concern</p> <p>Low Concern</p>
<p><u>Loading and Transporting:</u></p> <ul style="list-style-type: none"> <li>✚ Dust nuisance due to vehicles transporting the material,</li> <li>✚ Impact on the access roads,</li> <li>✚ Contamination of area with hydrocarbons or hazardous waste materials.</li> </ul>	<p><b>Duration of operational phase (7 years maximum)</b></p>	<p>Possible</p> <p>Low Possibility</p> <p>Low Possibility</p>	<p>Low – Medium Concern</p> <p>Low-Medium Concern</p> <p>Low Concern</p>

<p><u>Sloping and Landscaping upon Closure of the Site:</u></p> <ul style="list-style-type: none"> <li>✚ Soil erosion,</li> <li>✚ Dust nuisance caused during landscaping activities,</li> <li>✚ Noise nuisance caused by machinery,</li> <li>✚ Contamination of area with hydrocarbons or hazardous waste materials.</li> </ul>	<p><b>Decommissioning Phase</b></p>	<p><b>Low Possibility Low Possibility</b></p> <p><b>Low Possibility Low Possibility</b></p>	<p><b>Low Concern Low Concern</b></p> <p><b>Low Concern Low Concern</b></p>
<p><u>Replacing of Topsoil and Rehabilitation of Disturbed Area:</u></p> <ul style="list-style-type: none"> <li>✚ Loss of reinstated topsoil due to the absence of vegetation,</li> <li>✚ Infestation of the area by weeds and invader plants.</li> </ul>	<p><b>Decommissioning Phase</b></p>	<p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p>	<p><b>Low Concern</b></p> <p><b>Low Concern</b></p>

**APPENDIX H**  
**WEEDS AND INVADER PLANT**  
**MANGEMENT PLAN**



# WEEDS AND INVADER PLANT CONTROL PLAN

## Objective

The objective of an alien invasive plant management plan is to provide site management with an implementation tool to control problem plant species.

## What is a problem plant

According to Bromilow in the book, Problem plants of South Africa (2001) a weed is a plant in the wrong place at the wrong time. He describes these plants as vigorous growers that are easily adaptable being mostly exotic or foreign in origin. Weeds usually are pioneer plants that invade disturbed areas such as stockpile areas, overburden and topsoil stockpiles and firebreaks.

All species listed on Table 3 of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA) is deemed to be declared weeds and invader plants, and should be managed accordingly. When identifying weeds that need to be eradicated from the site the plants on this table are used as guideline. CARA prioritized the management of such plants into the following categories:

- ✳ Category 1 – These plants may not occur on any land or inland water surface. These plants may no longer be planted or propagated and all trade in their seeds, cuttings or any other propagation material is prohibited.
- ✳ Category 2 – These are invader plants that pose a threat to the environment but can be exploited for commercial value. These species are only allowed to occur in demarcated areas. Where plants occur outside demarcated areas they have to be controlled.
- ✳ Category 3 – These plants have the potential of becoming invasive but are considered to have ornamental value. The existing plants therefore do not have to be removed from the land user, but must be kept under control and no new planting may be initiated and the plants may no longer be sold.

## What to do with problem plants

Working for Water provides the site manager with an implementation tool to control problem species and keep the site free of alien and invasive plants:

Step 1 – Conduct Site Assessment

Step 2 – Set objectives based on resources available and priorities

- ✳ Prioritize management of plants according to the categories stipulated in CARA

Step 3 – Develop and implement an action plan to achieve objectives

- ✳ The plan must be long term and should include a clearing plan that includes follow up actions for rehabilitation of the cleared area.
- ✳ The site plan should include a map showing the areas invested with problem plants.
- ✳ Lighter invested areas should be cleared first to prevent the build-up of seed banks, while the eradication plan works progressively towards the areas with denser stands.
- ✳ Educate workers on the species that needs to be eradicated, as well as the specific method to be used.
- ✳ Conduct eradication of weeds.
- ✳ Remove eradicated weeds to a suitable disposal area.
- ✳ Prevent dispersal of seeds.
- ✳ Strive for collective management and planning with neighbors to prevent seed dispersal of problem plants across boundaries.

#### Step 4 – Monitor performance and change actions if necessary

- ✳ Conduct monthly inspections to enable early detection of grow back.

### **Control Methods**

The control methods to be implemented on site will be dependent on the specific problem plants that invaded the site. The best success is generally achieved through a combination of manual and chemical eradication methods with continuous follow-up actions. Site management must take care that the clearing methods used do not encourage further invasion through unnecessary disturbance of soil or naturally vegetated areas. The Department of Water and Sanitation's Working for Water section provides guidelines to the preferred clearing methods for most problem plants. This information can be obtained from their website: <http://www.dwaf.gov.za/wfw/Control/>. The selection of appropriate methods of control shall be based on the species to be controlled, the size of the plants, the density of the stand, the accessibility of terrain and environmental safety.

DWS propose that the following methods of control are appropriate for age or size target plants:

#### ✳ Seedlings

- ◆ Hand pulling or hoeing:
  - ✳ Hand pulling/hoeing should be carried out in sparse stands.
  - ✳ Seedlings should be severed below the soil surface or removed from the soil. Soil disturbance should be minimised to reduce re-germination.
- ◆ Herbicides:
  - ✳ Herbicides can be used on dense stands.

#### ✳ Saplings

- ◆ Hand pulling or hoeing:
  - ✗ Where appropriate saplings can be removed manually as described above.
- ◆ Herbicides:
  - ✗ Foliar sprays can be carried out depending on the density of the stand. Fan nozzles should be fitted for overall spraying and solid cone nozzles for individual plant treatment. Spraying should be restricted to plants waist high or lower. Ensure there is sufficient foliage to carry the herbicide to the root system.
  - ✗ Basal stem treatments of suitable herbicides in diesel can be carried out to the bottom 250 mm of the stem. Applications should be by means of a low pressure, coarse droplet spray from a narrow angle solid cone nozzle.
  - ✗ Cut stump treatments can be used where stems are cut as low as practical. Herbicides are applied in diesel or water as recommended for the herbicide. Applications in diesel should be to the whole stump and exposed roots and in water to the cut area as recommended on the label.
- ✳ Mature Trees (trees above shoulder height or robust bushes 12 – 1 months or older)
  - ◆ Ring Barking:
    - ✗ Bark must be removed from the bottom of the stem to a height of 0.75 – 1.0 m. All bark must be removed to below ground level for good results.
    - ✗ Where clean de-barking is not possible due to crevices in the stem or where exposed roots are present, a combination of bark removal and basal stem treatment should be carried out.
  - ◆ Frilling or partial frilling:
    - ✗ Cuts should be made through the bark into the sapwood by means of a light axe and a suitable herbicide must be applied into the cuts.
  - ◆ Basal stem treatments:
    - ✗ Suitable herbicides should be applied in diesel to the base of the stem and to any exposed roots. Stems with a diameter up to 50 mm should be treated to a height of 250 mm and stems above 50 mm diameter to a height of 500 mm. This method is only suitable for stems up to 100 mm in diameter.
  - ◆ Cut stump treatment:
    - ✗ Stumps should be cut as low as practical and the herbicide applied. Applications in diesel should be to the whole stump and exposed roots and in water to the cut area as recommended on the label.

When herbicides are chosen as the preferred control method the guidelines of Working for Water (DWS) as stipulated in the Policy on the Use of Herbicides for the Control of Alien Vegetation should be followed:



- ✱ Herbicides selected for control shall be registered for use on that species under the conditions specified.
- ✱ Protection of the environment is of prime importance. Riparian areas must be protected and only herbicides that are approved may be used. Washing of equipment or disposal of waste spray mixture is prohibited in or near water courses where contamination of water can occur.
- ✱ Empty herbicide containers must be disposed of as hazardous waste and may not be used for any other purpose.
- ✱ Equipment must be washed where there is no danger of contamination of a water source or natural vegetated area. It is proposed that washing be restricted to the wash bay.

Product and spray mixtures should be stored so that it is inaccessible to the public. Site management must ensure that the Material Safety Data Sheet of the product is available on site.

### **Site Specific Conditions**

Due to the transformed nature of the proposed footprint of the processing activity, no weeds or invader plants of specific importance could be identified. Site management must however monitor the site for the duration of the operational phase as well as the first 12 months after rehabilitation of the area to ensure the early eradication of weeds/invader plants germinating because of the disturbance.

#### **References:**

**Bromilow C.** 2001. Problem Plants of South Africa. Briza Publications. South Africa

**Todd S.** 2012. Alien Invasive Plant Management Plan: Solar Direct Graspan Solar Energy Facility

**Working for Water.** Indigenous Replacement Plants in the KZN region. Department of Water Affairs. South Africa

**Working for Water.** Policy on the Use of Herbicides for the Control of Alien Vegetation. Department of Water Affairs. South Africa

**APPENDIX I**  
**FINANCIAL AND TECHNICAL**  
**COMPETENCE**





# APPENDIX J

## PHOTOGRAPHS OF THE SITE





**PROPOSED PROCESSING AREA WITH ACCESS ROAD SEEN ON THE FAR LEFT PHOTO – SITE ALTERNATIVE 1**



**VIEW OF SURROUNDING AREA TOWARDS THE EAST**

**VIEW OF PROPOSED PROCESING AREA (PHOTO TAKEN TOWARDS THE SOUTH)**

**VIEW OF SURROUNDING AREA TOWARDS THE WEST**



**SITE ALTERNATIVE 2 SHOWING AREA WITH NATURAL VEGETATION  
(PHOTOS TAKEN FROM EAST TO WEST)**

# APPENDIX K

## CLOSURE PLAN



# **CLOSURE PLAN**

In accordance to Appendix 5 of the NEMA EIA Regulations, 2014 a closure plan for the proposed processing of rock/stone on Portion 3 of the farm Klaas Voogds Rivier 37, Robertson has been compiled.

## **1. Details and Expertise of the EAP**

<u>Name of the Practitioner:</u>	Ms Christine Fouche (Senior Environmental Specialist)
<u>Telephone Number:</u>	021 851 2673
<u>Facsimile Number:</u>	086 546 0579
<u>E-mail address:</u>	<a href="mailto:christine.f@greenmined.co.za">christine.f@greenmined.co.za</a>

Ms. Fouche has a Diploma in Nature Conservation and a BSc in Botany and Zoology with ten years' experience in doing Environmental Impact Assessments and Mining Applications in South Africa. See a full CV and list of past project attached as Appendix L.

## **2. Closure Objectives**

The closure objectives entail the landscaping and replacement of the topsoil over the processing area in order to rehabilitate the disturbance. Upon closure of the site, the topsoil will be returned and the area will revert back to agricultural use. The cover crop to be used in the rehabilitation of the site will tie in with the farming activities of the landowner.

The main aim of the applicant during the rehabilitation process will be to return the processing area to its prior status or a status better than before. As the area was previously used as an agricultural field the applicant will strive to reinstate the topsoil in order to ensure the continued use of the area by the landowner.

## **3. Compliance Monitoring and Performance Assessment Reporting**

Daily compliance monitoring will be the responsibility of the site manager. The site manager will be responsible to ensure compliance with the guidelines as stipulated in the EMPr as well as the prevention and/or rectification of environmental incidents.

The applicant will appoint an Environmental Control Officer to oversee the compliance of the processing activities. As stipulated in the Minerals and Petroleum Resources Development Regulations performance assessment reporting will annually be compiled and submitted, to DMR, by the Environmental Control Officer.



#### 4. Measures to Rehabilitate the Environment

The applicant will comply with the following measures to rehabilitation the environment upon closure of the site:

- ✚ All infrastructure and stockpiled material will be removed,
- ✚ To ensure minimum impact on drainage, it is important that no depressions be left on the footprint area. A surface slope (even if minimal) will be maintained across the processing floor in the drainage direction, so that it will be free draining,
- ✚ The stockpiled topsoil will then be evenly spread over the entire disturbed area to a depth of 500 mm. The depth will be monitored during spreading to ensure that coverage is adequate and even.
- ✚ Topsoil spreading will only be done 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 is minimized. The best time of year is 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.
- ✚ A cover crop will be planted and established immediately after spreading of topsoil to stabilize the soil and protect it from erosion. The cover crop will be fertilized for optimum production. It will be important to ensure that rehabilitation is taken up to the point of crop stabilization. Rehabilitation will not be considered complete until the first cover crop is well established.
- ✚ The rehabilitated area will be monitored for erosion, and appropriately stabilized if any erosion occurs.
- ✚ On-going problem plant control will keep the area free of alien vegetation.

The applicant will also comply with the minimum closure objectives as prescribed by DMR and detailed below:

- ✚ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed / alien clearing.
- ✚ All infrastructure, equipment, temporary equipment and other items used during the operational phase will be removed from the site (section 44 of the MPRDA).
- ✚ Waste material of any description, including receptacles, scrap, rubble and tires, will be removed entirely from the processing 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 activities.

- ✚ Species regarded as Category 1 weeds according to CARA (Conservation of Agricultural Recourses Act, 1983 – Act 43; Regulations 15 & 16 (as amended in March 2001) need to be eradicated from the site.
- ✚ Final rehabilitation shall be completed within a period specified by the Regional Manager.

## 5. Proposed Mitigation Measures

The following potential negative impacts, that will require mitigation, were identified for the decommissioning / rehabilitation phase:

- ✚ Soil erosion
- ✚ Dust nuisance caused during landscaping activities
- ✚ Noise nuisance caused by machinery
- ✚ Contamination of area with hydrocarbons or hazardous waste material
- ✚ Loss of reinstated topsoil due to the absence of vegetation
- ✚ Infestation of the area by weeds and invader plants

The following mitigation measures are proposed to address/minimize the impact of the proposed activity on the surrounding environment:

### **Erosion of returned topsoil after rehabilitation:**

- ✚ Storm water must be controlled via temporary banks to prevent run-off causing down-slope erosion.
- ✚ Topsoil spreading may only be done at a time of year when vegetation cover can be established as quickly as possible. This will minimize erosion of returned topsoil by both rain and wind. 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.
- ✚ A cover crop must be planted and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. 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.
- ✚ The rehabilitated area must be monitored for erosion, and appropriately stabilized should any erosion occurs.

### **Dust Handling:**

- ✚ 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 site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- ✚ Speed on the access roads must be limited to 40km/h to prevent the generation of excess dust.
- ✚ Gravel roads 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.
- ✚ Fallout dust monitoring must be implemented in order to ensure compliance of the site with the fallout dust standards from the National Dust Control Regulations, 2013.

### **Noise Handling:**

- ✚ The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- ✚ No loud music may be permitted at the processing area.
- ✚ All project-associated vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.
- ✚ Should the permit holder receive complaints with regard to boundary noise a noise impact study has to be conducted by a qualified specialist.

### **Contamination of area with hydrocarbons or hazardous waste material:**

- ✚ 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 to the satisfaction of the Regional Manager of DMR by removing the spillage together with the polluted soil and by disposing it at a recognized facility. Proof must be filed.
- ✚ All waste must be removed from site prior to final closure of the area.

### **Management of weed- or invader plants:**

- ✚ A weed and invader plant management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).
- ✚ 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 with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide."

## 6. Manner in which Impacts will be Mitigated

ACTIVITY	MITIGATION TYPE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	COMPLIANCE WITH APPLICABLE PROVISIONS OF THE ACT REGARDING CLOSURE
Erosion of returned topsoil after rehabilitation	<u>Control:</u> Soil management and seeding of mined areas	<ul style="list-style-type: none"> <li>✚ Storm water must be controlled via temporary banks to prevent run-off causing down-slope erosion.</li> <li>✚ Topsoil spreading may only be done at a time of year when vegetation cover can be established as quickly as possible. This will minimize erosion of returned topsoil by both rain and wind. 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 and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. It is important that rehabilitation be taken up to the point of cover crop stabilization. Rehabilitation cannot be</li> </ul>	<ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEMA, 1998</li> <li>✚ NWA, 1998</li> </ul> <p>The replacement of the topsoil is of utmost importance to ensure the effective future use of the area for agricultural purposes.</p>	<p>The applicant will also comply with the minimum closure objectives as prescribed by DMR and detailed below:</p> <ul style="list-style-type: none"> <li>✚ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed / alien clearing.</li> <li>✚ All infrastructure, equipment, temporary equipment and other items used during the operational phase will be removed from the site (section 44 of the MPRDA).</li> <li>✚ Waste material of any description, including receptacles, scrap, rubble and tires, will be removed entirely from the processing area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.</li> </ul>

ACTIVITY	MITIGATION TYPE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	COMPLIANCE WITH APPLICABLE PROVISIONS OF THE ACT REGARDING CLOSURE
	modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation during closure	remedy the cause of pollution or degradation and migration of pollutants during closure	comply with any prescribed environmental management standards or practices	
Dust nuisance caused during landscaping activities	<u>Control:</u> Dust suppression	<p>considered complete until the first cover crop is well established.</p> <ul style="list-style-type: none"> <li>✚ The rehabilitated area must be monitored for erosion, and appropriately stabilized should any erosion occurs.</li> <li>✚ Storm water must be diverted around the rehabilitated areas to prevent erosion.</li> <li>✚ The effectiveness of the storm water infrastructure needs to be continuously monitored.</li> </ul> <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, water spraying and/or other dust-allaying agents.</li> <li>✚ The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> <li>✚ Speed on the access roads must be limited to 40km/h to prevent the generation of excess dust.</li> <li>✚ Gravel roads must be sprayed with water or an</li> </ul>	<ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ National Dust Control Regulations, 2013</li> </ul>	<ul style="list-style-type: none"> <li>✚ Weed / Alien clearing will be done in a sporadic manner during the life of the activities.</li> <li>✚ Species regarded as Category 1 weeds according to CARA (Conservation of Agricultural Recourses Act, 1983 – Act 43; Regulations 15 &amp; 16 (as amended in March 2001) need to be eradicated from the site.</li> <li>✚ Final rehabilitation shall be completed within a period specified by the Regional Manager.</li> </ul>

ACTIVITY	MITIGATION TYPE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	COMPLIANCE WITH APPLICABLE PROVISIONS OF THE ACT REGARDING CLOSURE
	<p>modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation during closure</p>	<p>remedy the cause of pollution or degradation and migration of pollutants during closure</p>	<p>comply with any prescribed environmental management standards or practices</p>	
<p>Noise nuisance caused by machinery</p>	<p><u>Control:</u> Noise management</p>	<p>environmentally friendly dust-allaying agent that contains no PCB's (e.g. DAS products) if dust is generated above acceptable limits.</p> <ul style="list-style-type: none"> <li>✚ Fallout dust monitoring must be implemented in order to ensure compliance of the site with the fallout dust standards from the National Dust Control Regulations, 2013.</li> </ul> <ul style="list-style-type: none"> <li>✚ The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site.</li> <li>✚ No loud music may be permitted at the processing area.</li> <li>✚ All project-associated vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.</li> <li>✚ Should the permit holder receive complaints with regard to boundary noise a noise impact study has to be conducted by a qualified specialist.</li> </ul>	<ul style="list-style-type: none"> <li>✚ NEM:AQA, 2004 Regulation 6(1)</li> <li>✚ All project related vehicles must be in a road worthy condition in terms of the Road Transport Act, 1987</li> </ul>	

ACTIVITY	MITIGATION TYPE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	COMPLIANCE WITH APPLICABLE PROVISIONS OF THE ACT REGARDING CLOSURE
Contamination of area with hazardous waste materials	modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation during closure  <u>Control:</u> Waste management	remedy the cause of pollution or degradation and migration of pollutants during closure  <ul style="list-style-type: none"> <li>✚ No pollution of surface water or ground water resources may occur due to any activity.</li> <li>✚ No storm water runoff from any premises containing waste, or water containing waste emanating from industrial activities and premises may be discharged into a water resource. Polluted storm water must be contained.</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>✚ Spills must be cleaned up immediately to the satisfaction of the Regional Manager of DMR by removing the spillage together with the polluted soil and by disposing it 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> </ul>	comply with any prescribed environmental management standards or practices  <ul style="list-style-type: none"> <li>✚ NWA, 1998</li> <li>✚ NEM:WA, 2008</li> <li>✚ Every precaution must be taken to prevent contamination. The precautionary principal must apply.</li> </ul>	



ACTIVITY	MITIGATION TYPE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	COMPLIANCE WITH APPLICABLE PROVISIONS OF THE ACT REGARDING CLOSURE
Loss of reinstated topsoil due to the absence of vegetation	<u>Control:</u> Storm water management	<ul style="list-style-type: none"> <li>✚ Storm water must be controlled via temporary banks to prevent run-off causing down-slope erosion.</li> <li>✚ Topsoil spreading may only be done at a time of year when vegetation cover can be established as quickly as possible. This will minimize erosion of returned topsoil by both rain and wind. 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 and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum production. 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> </ul>	<ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ NEM:BA, 2004</li> <li>✚ MPRDA, 2008</li> <li>✚ The replacement of the topsoil and sloping of the area is of utmost importance to ensure the effective future use of the area for agricultural purposes.</li> <li>✚ Rehabilitation cannot be considered complete until the first cover crop is well established.</li> </ul>	

ACTIVITY	MITIGATION TYPE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	COMPLIANCE WITH APPLICABLE PROVISIONS OF THE ACT REGARDING CLOSURE
	modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation during closure	remedy the cause of pollution or degradation and migration of pollutants during closure	comply with any prescribed environmental management standards or practices	
Weeds and invader plant infestation of the area	<u>Control &amp; Remedy:</u> Implementation of weed control	<ul style="list-style-type: none"> <li>✚ The rehabilitated area must be monitored for erosion, and appropriately stabilized should any erosion occurs.</li>   <li>✚ A weed and invader plant management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).</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 with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide."</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✚ CARA, 1983</li> <li>✚ All species regarded as Category 1 weeds according to CARA need to be eradicated from site.</li> </ul>	

## **7. Time Periods of Implementation**

It is proposed that the decommissioning / rehabilitation of the processing area will take approximately three months to complete. Rehabilitation can however not be considered complete until the first cover crop is well established, therefore it is proposed that the rehabilitation phase will extend over at least a six month period.

Control of weeds and alien 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 management plan during the 12 months aftercare period to address germination of problem plants in the area. Final rehabilitation shall be completed within a period specified by the Regional Manager.

## **8. Details of Public Participation**

The details with regard to the public participation followed during this assessment process can be seen attached as Appendix F to the EIAR.

## **9. Financial Provision**

The annual amount required to manage and rehabilitate the environment was estimated to be R69 000. Please see the explanation as to how this amount was derived at attached as Appendix I – Financial and Technical Competence.

The calculation of the quantum for financial provision was according to Section B of the working manual, and the amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum total of R 720 122.30.

# APPENDIX L

## CV AND EXPERIENCE RECORD OF EAP

