

# **THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED**

## **QUARRY ON PORTION 100 OF THE FARM STRATHMORE NO 214 JU**

### **CLOSURE REPORT**

#### **1. INTRODUCTION**

Chameleon Environmental was commissioned by SANRAL to conduct the environmental studies pertaining to the opening of a quarry on Portion 100 of the Farm Strathmore No 214 JU. The landowner is Libuyile Communal Trust.

#### **2. DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)**

The EAP that prepared this report is Dr J Bothma from Chameleon Environmental. The Environmental Assessment Practitioner (EAP) has the appropriate skills and experience to undertake the required studies for the proposed project. Dr Bothma has a PhD in Environmental Management:

- Experience in undertaking environmental studies for linear development projects. The EAP has specific experience in EIAs for National Roads for the South African National Roads Agency Soc Limited and other clients.
- Experience in environmental studies for borrow pits and quarries.
- The EAP is registered as an Environmental Assessment Practitioner with EAPSA with registration number 0082/06.
- Proven ability to timeously produce thorough, readable and informative documents.
- Adequate recording and reporting systems to ensure the preservation of all data gathered.
- A good working knowledge of all relevant and applicable policies, legislation, guidelines, norms and standards.
- The EAP does not have any links to engineering firms, construction companies, or financial institutions, and would be able sign the required declarations of independence to be submitted to the relevant environmental authorities.

Dr Bothma was previously the Environmental Manager for the South African National Roads Agency Soc Limited where she was responsible for the management of the environmental section at the Agency and consequently has gained extensive experience in project management and EIAs for major national road projects.

Dr Bothma is a founder member of Chameleon Environmental since August 2006, a specialist environmental consulting company based in Pretoria, South Africa but operates nationwide. The company provides a broad range of environmental consulting services to the public and private sectors. She has:

- » Thirty-two (32) years' experience in the environmental field
- » Twenty-two (22) years' experience in Project Management
- » Project management of large environmental assessment and environmental management projects.

### **3. CLOSURE OBJECTIVES**

After the utilisation of the quarry, it will be rehabilitated and closed. Rehabilitation of the quarry would entail infilling with natural spoils as far as possible. Proper fencing around the quarry and clearly visible signage indicating a dangerous area will be put into place.

#### **3.1 Shaping of Quarry**

The mining area will be shaped to ensure no stockpiled heaps. The quarry will be mined in steps with at least the following end result:

- A slope of 1:1.5;
- A 3 m wide step at every 5 m depth.

#### **3.2 Closure Measures**

The following will be undertaken:

- a. Removal of mobile equipment and all scrap material;
- b. All unused material would be levelled to ensure that the quarry blends back into the existing landscape fabric. No stockpiled material is to be retained on site. Waste will not be permitted to be deposited in the excavations. Rocks and coarse material removed from the excavation must be dumped into the excavation simultaneously with the tailings.
- c. Removal of crushing- and screening plant as well as the concrete footings and the primary ramp retaining wall;
- d. Removal of all containers used as offices, workshops and stores. Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped. Areas containing French drains, if any, shall be compacted and covered with a final layer of topsoil to a height of 10cm above the surrounding ground surface;
- e. Clean-up of any fuel or lubricant spillage;
- f. Ensuring that all stormwater control mechanisms are in place.
- g. Ensuring alien vegetation is removed during and at the end of each contract;
- h. Ensuring that the access road is maintained and properly rehabilitated;
- i. Waste or bitumen will not be permitted to be deposited in the excavations. Rocks and coarse material removed from the excavation must be dumped into the excavation simultaneously with the tailings.
- j. Vegetative growth on the slopes is usually not possible at a quarry.
- k. Any permanent structures and facilities including brick-built personnel amenities , soak-aways, workshop aprons and workshop floors, gas stores and any electrical supply from the grid need to be removed and the area rehabilitated.
- l. Photographs of the camp and office sites, before and during the mining operation and after rehabilitation, shall be taken at selected fixed points and kept on record.
- m. The area will be fenced.
- o. The area will be reverted back to the landowner.

#### 4. MECHANISMS FOR MONITORING COMPLIANCE WITH AND PERFORMANCE ASSESSMENT AGAINST THE CLOSURE PLAN AND REPORTING THEREON

The source activities and impacts requiring monitoring programmes during closure for the mining at both borrow pits were identified as the following:

Table 1: Source activities and impacts requiring monitoring programmes

PHASE	SOURCE ACTIVITY	IMPACT REQUIRING MONITORING PROGRAMMES
DECOMMISSIONING PHASE	Sloping and Landscaping during rehabilitation	<ul style="list-style-type: none"> <li>• Soil erosion</li> <li>• Health and safety risk posed by unsloped areas</li> <li>• Dust nuisance caused during sloping and landscaping activities</li> <li>• Noise nuisance caused during sloping and landscaping activities</li> <li>• Contamination of site due to hydrocarbons</li> <li>• Emissions from heavy vehicles</li> </ul>
	Replacing the topsoil and revegetating the disturbed area	<ul style="list-style-type: none"> <li>• Loss of reinstated topsoil due to absence of vegetation</li> <li>• Infestation of the area with weed and invader plants</li> </ul>

##### 4.1 Functional requirements for monitoring

Please see Appendix J of the BAR report.

##### 4.2 Roles and responsibilities

Please see Appendix J of the BAR report.

##### 4.3 Time frames for monitoring

Please see Appendix J of the BAR report.

## **5. MEASURES TO REHABILITATE THE ENVIRONMENT**

The measures to rehabilitate the environment affected by any listed activity were determined in table 2.

Table 2: Measures to rehabilitate the environment

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Period for implementation
Sloping and Landscaping	Decommissioning and closure	19.9 ha	<ul style="list-style-type: none"> <li>- Control through dust suppression</li> <li>- Control measures to prevent soil erosion</li> <li>- Control through noise control measures</li> <li>- Control measures to lower visual intrusion</li> <li>- Control measures to lower impacts on terrestrial ecology</li> <li>- Control measures for hydrocarbon spillage</li> <li>- Control measures to lower emissions from heavy vehicles</li> <li>- Control measures for removal of alien vegetation</li> </ul>	<p>SANS noise control legislation</p> <p>Dust standards</p> <p>Safety standards</p> <p>Approved EMPr</p>	<p>Upon cessation of mining activities.</p> <p>Progressive rehabilitation</p>

## 6. AVOIDANCE, MANAGEMENT AND MITIGATION MEASURES

The avoidance, management and mitigation measures that will be taken to address the possible environmental impacts resulting from the undertaking of the activity was determined in table 3.

Table 3: Avoidance, management and mitigation measures

Activities	Potential impact	Aspects Affected	Phase	Mitigation type	Standards to be achieved
Sloping and Landscaping	<ul style="list-style-type: none"> <li>- Dust</li> <li>- Soil Erosion</li> <li>- Noise</li> <li>- Visual</li> <li>- Terrestrial Ecology</li> <li>- Hydrocarbon spillage</li> <li>- Emissions from heavy vehicles</li> </ul>	<ul style="list-style-type: none"> <li>- Workers</li> <li>- Travelling public</li> <li>- Fauna and flora</li> </ul>	Decommissioning and closure	<ul style="list-style-type: none"> <li>- Control through dust suppression</li> <li>- Control measures to prevent soil erosion</li> <li>- Control through noise control measures</li> <li>- Control measures to lower visual intrusion</li> <li>- Control measures to lower impacts on terrestrial ecology</li> <li>- Control measures for hydrocarbon spillage</li> <li>- Control measures to lower emissions from heavy vehicles</li> <li>- Control measures</li> </ul>	<ul style="list-style-type: none"> <li>- No dust nuisance or complaints from landowners or public</li> <li>- No soil erosion and complaints from landowners</li> <li>- Noise levels shall be kept to a minimum. The working hours shall be limited to between 07:00 hrs and 18:00 hrs on weekdays, and 07:00 hrs and 16:00 hrs on Saturdays, or as per contract documentation.</li> <li>- Earth berms should be placed to the side of the road to</li> </ul>

Activities	Potential impact	Aspects Affected	Phase	Mitigation type	Standards to be achieved
				for removal of alien vegetation	obscure the mining activities from the travelling public, if possible. - Impact to the terrestrial ecology low. Mitigation measures as per specialist study - Spillage contained - Low emissions - No alien vegetation at borrow areas

## **7. DESCRIPTION OF MANNER TO MODIFY, REMEDY, CONTROL OR STOP ANY ACTION, ACTIVITY OR PROCESS WHICH CAUSES POLLUTION OR ENVIRONMENTAL DEGRADATION DURING CLOSURE**

### **7.1 Impact Management Measures**

The following impact management measures will be implemented by SANRAL to prevent or remedy any possible pollution or degradation of the environment:

#### **a. Possible dust and air pollution**

- Dust will be suppressed through a watering management programme, especially during windy conditions.
- Dust generated will be carefully monitored by the OHS&E and should be suppressed by means of water regularly.
- Access roads will be watered regularly, especially in the dry winter months and in periods of high wind.
- Vegetation will not be unnecessary stripped.
- Domestic fires will be prohibited on site.
- Heavy vehicle will be serviced regularly to ensure emission control.

#### **b. Soil Erosion**

- Topsoil, if any, will be removed over the whole mining area and stored in a perimeter berm. The height of the topsoil berm will not exceed 3m.
- The topsoil berm will be inspected for erosion daily.
- Minimal amounts of topsoil shall be lost due to erosion, either by wind or water. This can be facilitated through the grassing of topsoil stockpiles, where needed.
- Condition of soil in walk or drive areas should be checked daily for erosion.
- Access road condition will be checked daily.
- If erosion is noted at walk and drive areas, access road or topsoil berms, the erosion channel will be fixed by placing cut vegetation, sandbags or rocks within the erosion channel and the cause of the erosion will be mitigated through the creation of runoff channels.

#### **c. Possible Noise Pollution**

- The working hours shall be limited to between 07:00 hrs and 18:00 hrs on weekdays, and 07:00 hrs and 17:00 hrs on Saturdays, or as per contract documentation.
- Vehicles must be driven at a moderate speed (50 kph) on private roads.
- Noise generated from the trucks that transport the material and the excavator that is used to mine the material shall only be carried out during normal working hours.
- Extended working hours will be in accordance with contract documentation.
- SANRAL Infrastructure shall be obligated to maintain vehicles used at the mining area in a good condition;
- SANRAL Infrastructure will be obliged to ensure that all personnel on site apply occupational health and safety requirements with respect to hearing protection.

#### **d. Possible Visual impact**

- Concurrent rehabilitation of the mining area will take place.



- All unused material would be levelled to ensure that the mining area blends back into the existing landscape fabric.
- No stockpiled material is to be retained on site.
- The mining area will be shaped to ensure no stockpiled heaps and that the area blends in with the existing landscape.
- All stockpiled topsoil and vegetative material will be spread over the bottom of the mining area to ensure proper seed bed for the re-establishment of vegetative growth. Placing a berm of topsoil along the perimeter of the mining site to obscure the visual impact of the excavation.
- Re-vegetation of the mining area after mining operation has ceased.
- The access gravel road to the quarry will be rehabilitated and the quarry will be fenced following the mining of the area.

#### **e. Aquatic and Terrestrial Ecology**

##### **Construction & Operation Phase**

- No temporary accommodation or temporary storage facilities may be setup within 100m of the any watercourse, including drainage lines and farm dams.
- No temporary facilities (including portable toilets) to be positioned within a 100m of the edge of any watercourses.
- Only existing roads to be used by vehicles during construction / set up phase as far as possible.
- Access roads to be maintained at all times.
- All construction material, equipment and any foreign objects brought into the area by contractors to be removed immediately after completion of the construction / set up phase.
- Proper rubbish/waste bins to be provided. These to be emptied weekly and the waste to be removed to an official waste disposal site.
- During the operation phase the gravel access roads need to be continually maintained. Storm water run-off and erosion of gravel access roads are important considerations, including damaged caused by heavy vehicles.
- A site-specific rehabilitation plan for the closure of the quarry has to be compiled and implemented.

##### **Maintenance phase**

- A weed control programme must be implemented to monitor and destroy any weeds / alien plants brought into the area through project-related activities.
- All litter / rubbish in the area to be continually clean-up and removed from the area to proper landfill sites.

#### **f. Possible Impact on Uncovered Cultural or Archaeological site**

- If an artefact or grave on-site is uncovered, work in the immediate vicinity shall be stopped immediately and it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article.
- The South African Heritage Resources Agency (SAHRA) shall be contacted such that an archaeological/heritage resources consultant can be appointed to record the site and excavate if necessary. Work may only resume once clearance is given in writing by the archaeologist/heritage resources consultant.

**g. Possible contamination of site due to hydrocarbons spillage**

- All heavy vehicles, excavators and generators used for the mining will be in good working condition.
- A drip tray will be available to place underneath haul vehicles while the vehicles are parked at night.
- Should a vehicle have a break down, it will be serviced immediately. If soil contamination with diesel and oils occurred, the spill will be cleared up promptly. If the spill is small, it will be cleaned with a spill kit. If a major spill occurs where a spill kit is insufficient for clean-up, a specialised company will be used to clean the spill.
- Proper functioning of heavy vehicles will be ensured.

**h. Possible establishment and spread of alien vegetation**

- Every 3 months casual labour will be employed to circumnavigate the site to hand pull out known alien vegetation that may have established in the disturbed area. Special attention will be given to the perimeter topsoil berm.
- Casual labour will be provided with photographs of the alien vegetation that could establish.

**i. Sanitation Facilities**

- Chemical toilet facilities shall preferably be used on site. The toilets shall be serviced every second week by a service provider.

**j. Safety of sloped areas**

- The walls of the mining area will be sloped to a slope of at least 1:3 in order to prevent dangerous vertical walls.
- The quarry will be free draining.

**k. Emissions from heavy vehicles, excavator and generators**

- All heavy vehicles, excavators and generators used for the mining will be in good working condition and will be serviced regularly.
- Should a vehicle have a break down, it will be serviced immediately.

**l. Unsafe working conditions for employees**

- Appropriate safety clothing will be worn at all times i.e. head gear, shoes, ear plugs.

**7.2 Compliance with environmental standards**

The following standards will be complied with:

- SANS noise control legislation
- Dust standards
- Safety standards
- Approved EMPr

Please refer to table 4 for mitigation type on how to comply with standards.

Table 4: Impact Management Actions

<p><b>ACTIVITY</b> whether listed or not listed.</p> <p>E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, beams, roads, pipelines, power lines, conveyors, etc...etc... etc.)</p>	<p><b>POTENTIAL IMPACT</b></p> <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution etc....etc...)</p>	<p><b>MITIGATION TYPE</b></p> <p>(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.</p> <p>E.g.</p> <ul style="list-style-type: none"> <li>• <b>Modify through alternative method.</b></li> <li>• <b>Control through noise control</b></li> <li>• <b>Control through management and monitoring</b></li> </ul> <p><b>Remedy through rehabilitation.</b></p>	<p><b>TIME PERIOD FOR IMPLEMENTATION</b></p> <p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.</p> <p>Upon cessation of the individual activity</p> <p>or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>	<p><b>COMPLIANCE WITH STANDARDS</b></p> <p>(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)</p>
<p>Vegetation stripping</p>	<ul style="list-style-type: none"> <li>- Dust</li> <li>- Soil Erosion</li> <li>- Noise</li> <li>- Visual</li> <li>- Terrestrial Ecology - Uncovering graves or artefacts</li> <li>- Hydrocarbon spillage</li> </ul>	<ul style="list-style-type: none"> <li>- Control through dust suppression</li> <li>- Control measures to prevent soil erosion</li> <li>- Control through noise control measures</li> <li>- Control measures to lower visual intrusion</li> </ul>	<p>The measures in the Environmental Management Programme must be implemented during the construction phase for the quarry.</p>	<p>SANS noise control legislation</p> <p>Dust standards</p> <p>Safety standards</p> <p>Approved EMPR</p>

	<ul style="list-style-type: none"> <li>- Emissions from heavy vehicles</li> </ul>	<ul style="list-style-type: none"> <li>- Control measures to lower impacts on terrestrial ecology</li> <li>- Control measures for uncovering graves or artefacts</li> <li>- Control measures for hydrocarbon spillage</li> <li>- Control measures to lower emissions from heavy vehicles</li> <li>- Control measures for removal of alien vegetation</li> </ul>		
Stripping and stockpiling of topsoil	<ul style="list-style-type: none"> <li>- Dust</li> <li>- Soil Erosion</li> <li>- Noise</li> <li>- Visual</li> <li>- Terrestrial Ecology</li> <li>- Uncovering graves or artefacts</li> <li>- Hydrocarbon spillage</li> <li>- Emissions from heavy vehicles</li> </ul>	<ul style="list-style-type: none"> <li>- Control through dust suppression</li> <li>- Control measures to prevent soil erosion</li> <li>- Control through noise control measures</li> <li>- Control measures to lower visual intrusion</li> <li>- Control measures to lower impacts on terrestrial ecology</li> <li>- Control measures for uncovering graves or artefacts</li> <li>- Control measures for hydrocarbon spillage</li> <li>- Control measures to lower emissions from heavy vehicles</li> <li>- Control measures for removal of alien vegetation</li> </ul>	The measures in the Environmental Management Programme must be implemented during the construction phase for the quarry.	<p>SANS noise control legislation</p> <p>Dust standards</p> <p>Safety standards</p> <p>Approved EMPR</p>
Blasting	<ul style="list-style-type: none"> <li>- Dust</li> <li>- Soil Erosion</li> <li>- Noise</li> </ul>	<ul style="list-style-type: none"> <li>- Control through dust suppression</li> <li>- Control measures to prevent</li> </ul>	The measures in the Environmental Management Programme must be	<p>SANS noise control legislation</p> <p>Dust standards</p>

		soil erosion - Control through noise control measures	implemented during the operational phase for the quarry.	Safety standards Approved EMPR
Crushing	- Dust - Noise - Hydrocarbon spillage	- Control through dust suppression - Control through noise control measures - Control measures for hydrocarbon spillage - Control measures to lower	The measures in the Environmental Management Programme must be implemented during the operational phase for the quarry.	SANS noise control legislation Dust standards Safety standards Approved EMPR
Excavations	- Dust - Soil Erosion - Noise - Visual - Terrestrial Ecology - Uncovering graves or artefacts - Hydrocarbon spillage - Emissions from heavy vehicles	- Control through dust suppression - Control measures to prevent soil erosion - Control through noise control measures - Control measures to lower visual intrusion - Control measures to lower impacts on terrestrial ecology - Control measures for uncovering graves or artefacts - Control measures for hydrocarbon spillage - Control measures to lower emissions from heavy vehicles - Control measures for removal of alien vegetation	The measures in the Environmental Management Programme must be implemented during the operational phase for the quarry.	Tree permit SANS noise control legislation Dust standards Safety standards Approved EMPR
Stockpiling and transporting of gravel material	- Dust - Soil Erosion	- Control through dust suppression	The measures in the Environmental Management	SANS noise control legislation

	<ul style="list-style-type: none"> <li>- Noise</li> <li>- Visual</li> <li>- Terrestrial Ecology</li> <li>- Uncovering graves or artefacts</li> <li>- Hydrocarbon spillage</li> <li>- Emissions from heavy vehicles</li> </ul>	<ul style="list-style-type: none"> <li>- Control measures to prevent soil erosion</li> <li>- Control through noise control measures</li> <li>- Control measures to lower visual intrusion</li> <li>- Control measures to lower impacts on terrestrial ecology</li> <li>- Control measures for uncovering graves or artefacts</li> <li>- Control measures for hydrocarbon spillage</li> <li>- Control measures to lower emissions from heavy vehicles</li> <li>- Control measures for removal of alien vegetation</li> </ul>	<p>Programme must be implemented during the operational phase for the quarry.</p>	<p>Dust standards</p> <p>Safety standards</p> <p>Approved EMPR</p>
Sloping and Landscaping	<ul style="list-style-type: none"> <li>- Dust</li> <li>- Soil Erosion</li> <li>- Noise</li> <li>- Visual</li> <li>- Terrestrial Ecology</li> <li>- Uncovering graves or artefacts</li> <li>- Hydrocarbon spillage</li> <li>- Emissions from heavy vehicles</li> </ul>	<ul style="list-style-type: none"> <li>- Control through dust suppression</li> <li>- Control measures to prevent soil erosion</li> <li>- Control through noise control measures</li> <li>- Control measures to lower visual intrusion</li> <li>- Control measures to lower impacts on terrestrial ecology</li> <li>- Control measures for uncovering graves or artefacts</li> <li>- Control measures for hydrocarbon spillage</li> <li>- Control measures to lower</li> </ul>	<p>The measures in the Environmental Management Programme must be implemented during the decommissioning and closure phases for the quarry.</p>	<p>SANS noise control legislation</p> <p>Dust standards</p> <p>Safety standards</p> <p>Approved EMPR</p>

		emissions from heavy vehicles - Control measures for removal of alien vegetation		
--	--	--	--	--



## 8. TIME PERIODS FOR IMPLEMENTATION

The rehabilitation measures will be implemented as soon as the mining activity has ceased.

Proper monitoring ensures the correct and successful implementation of environmental management measures, to reduce negative impact on environmental conditions.

Monitoring on site should be on a regular basis and be included as a responsibility of the Site Manager.

Monitoring should be focused on on-site conditions during the day-to-day activities and specifically when sub-contractors enter an area for scheduled work or emergency repairs as per the monitoring schedule below.

The following time frames for monitoring and reporting should be implemented:

**Table 5: TIME FRAMES FOR MONITORING AND REPORTING**

<b>MONITORING ASPECTS</b>	<b>TIME FRAME</b>	<b>REPORTING INTERVALS</b>
Vegetation stripping	Construction phase	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E officer</li> <li>• Monthly by site manager</li> </ul>
Dust Nuisance	Construction and Operational phases Decommissioning phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E officer</li> <li>• Weekly by site manager</li> </ul>
Soil Erosion	Construction and Operational phases Decommissioning phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E officer</li> <li>• Monthly by site manager</li> </ul>
Noise Nuisance including blasting	Operational phase Decommissioning phase	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Weekly by site manager</li> </ul>
Visual impact	Construction and Operational phases Decommissioning phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Monthly by site manager</li> </ul>
Terrestrial ecology	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Monthly by site manager</li> </ul>
Impact on uncovered heritage aspects	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Weekly by site manager</li> </ul>
Contamination of site due to	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Monthly by site manager</li> </ul>

<b>MONITORING ASPECTS</b>	<b>TIME FRAME</b>	<b>REPORTING INTERVALS</b>
hydrocarbon spillage	Decommissioning phases	
Infestation of weeds and alien vegetation on topsoil heaps	Construction and Operational phases Decommissioning phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Monthly by site manager</li> </ul>
Loss of topsoil due to incorrect storm water management	Construction and Operational phases Decommissioning phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Monthly by site manager</li> </ul>
Contamination of surface or groundwater due to effluent runoff from excavation	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Monthly by site manager</li> </ul>
Unsafe working conditions for employees	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Daily by site manager</li> </ul>
Potential damage to cultural and heritage aspects	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Monthly by site manager</li> </ul>
Degradation of access roads	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Weekly by site manager</li> </ul>
Health and safety risk posed by unsloped areas	Decommissioning	<ul style="list-style-type: none"> <li>• Quarterly by OHS&amp;E</li> </ul>
Loss of reinstated topsoil due to absence of vegetation	Decommissioning	<ul style="list-style-type: none"> <li>• Quarterly by OHS&amp;E</li> </ul>
Storm water management	Construction and Operational phases Decommissioning phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Weekly by site manager</li> </ul>
Proper functioning of sanitation systems	Construction and Operational phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Weekly by site manager</li> </ul>
Vegetation establishment	Decommissioning phase	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> </ul>
Heavy vehicle emissions	Construction and Operational phases Decommissioning phases	<ul style="list-style-type: none"> <li>• Daily by OHS&amp;E</li> <li>• Weekly by site manager</li> </ul>

## **9. PROCESS FOR MANAGING ENVIRONMENTAL DAMAGE**

SANRAL Infrastructure shall ensure that its employees are adequately trained with regard to the implementation of the EMP, as well as regarding the process for managing environmental damage.

### **a. Induction Training:**

All employees and visitors on site will have an INDUCTION training on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees.

The environmental training should include information on possible environmental risks.

Employees will be adequately trained with regard to the following potential environmental risks:

- The risk of non-conformance with all environmental policies, procedures, plans and systems.
- The risk of not strictly implementing the approved EMP.
- The potential consequences of departure from specified operating procedures.
- The significant environmental impacts, actual or potential, as a result of their work activities.

### **b. General awareness training and training on dealing with emergency situations:**

Employees will be given general awareness training and training on dealing with emergency situations by means of the following:

- Understanding, and importance of, and the reasons why, the environment must be protected.
- Basic awareness and understanding of the key environmental features of the work site and environments.
- The mitigation measures required to be implemented when carrying out their work activities.
- The environmental benefits of improved personal performance.
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures, including emergency preparedness and response requirements.
- What to do in the case of a hydrocarbon spill.
- Who to contact in the case of an emergency.

## **10. PUBLIC PARTICIPATION PROCESS**

A public participation process was undertaken in accordance with the EIA Regulations, 2014, as amended.

The public participation and communication process aims to identify issues in order to maximise the social and environmental benefits, and to minimise the social and environmental costs of the proposed project. Interested and affected parties (I&APs) were consulted and afforded the opportunity to participate. The I&APs were informed and involved in the project from the outset in order to promote participation and transparency.

The aim of this public participation process is to achieve the following broad goals:

- identification of all key I&APs and stakeholders;
- the active involvement of all I&APs with respect to decision making;
- an exchange of information relevant to the proposed project through Background Information Documents (BID), consultations and newspaper advertisements.
- the development of an understanding with regards to the broader project objectives and goals and knowledge of the project; and
- the identification of issues and concerns with regards to all potential alternatives associated with the proposed development.

The following approach was followed in undertaking the public participation process:

a. Identification of and Consultation with I&APs

The first step in the public participation process was to identify the key I&APs. A list of the registered I&APs is attached as Appendix D in the BAR.

b. Advertising

In accordance with the EIA Regulations, 2014, as amended an advertisement was placed requesting I&APs to register their interest in the project. An advertisement was placed in the **The Lowvelder of 29 July 2021**. A copy of the advertisement is included in Appendix D of the BAR.

c. Site Notice

Site notifications in English in A2 format requesting comments or objections were placed on site on 23 July 2021. Photographs of the site notice are included in Appendix I of the BAR.

d. Notification Letter and Background Information Document

Notification letters about the project and a Background Information Document were sent out to the particular Ward Councillor and Government Departments that would be relevant to this project. The affected landowner, the Libuyile Community Trust represented by Mr Mr Mosa Chirwa, signed a landowner notification form. He has no objection to the proposed development. Please see letters in Appendix D of the BAR.

e. Comments and Response Report

A comments and response report was drafted that included all the issues raised by the Interested and/or Affected Parties as well as the responses to the issues raised. The Comments and Response report is included in Appendix D of the BAR.

f. Local Authority Involvement

A letter was forwarded to the Nkomazi Local Municipality and the Ehlanzeni District Municipality. The letters are included in Appendix D of the BAR.

g. Review of Draft Basic Assessment Report

The Draft Basic Assessment Report was made available to the public for review and comment, within an allocated 30-day period. A copy of the report was available in electronic format.

## **11. FINANCIAL PROVISION**

The rehabilitation cost for the quarry was determined by means of the SARS quantum scales. The quantum for the quarry is calculated at R1,009,424.00 for the rehabilitation of the quarry.

Please refer to Appendix H for the quantum for the quarry in the BAR.