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13 March 2023

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
DIRECTORATE OF ENVIRONMENTAL AFFAIRS
15 MAR 2023
Tel: 061 284 2701
RECEIVED 2
Signature: J. Uyandi

The Environmental Commissioner
Ministry of Environment Forestry and Tourism
c/o Robert Mugabe and Uhland Streets
Windhoek

Dear Sir

RE: Renewal of Environmental Clearance Certificate (ECC - 00274) for the gravel mining activities within Swakopmund municipal land, Erongo Region.

1. This is an application made in terms of Section 32 of the Environmental Management Act, 7 of 2007 ("the Act") for the renewal of an ECC in respect of the above project which was previously issued to the applicant on the 29.10.2019 (see attachment).

2. In support of the previous ECC application, an Environmental Impact Assessment and Environmental Management Plan for the proposed project was submitted by Chitalu Shikaputo in October 2015. No activities were carried out within the project area and no amendments were done to the project during the year 2016 when the first ECC was issued to date.

3. In the light thereof the EIA and EMP previously submitted will not be superseded, taking into consideration that no work was conducted and therefore no new impacts are expected at all stages of the project apart from those which have been previously identified in the documents submitted.

4. In terms of Section 57 of the Act, the current approval granted for the area expired on the 29th of October 2022. In the light thereof, we attach hereto the duly completed Form-1 (Annexure A), duly stamped in the amount of N$300.00, representing the prescribed fee.

5. Annexure A provides a copy of the expired ECC for the proposed gravel mining activities.

6. Annexure B provides the renewal Application form 1.

7. Annexure C provides the previously submitted and approved EMP.

8. We kindly request that the office of the Environmental Commissioner shall:

ECC – 00274 Serial:tDaklJ274

REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT AND TOURISM

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE

ISSUED

In accordance with Section 37(2) of the Environmental Management Act (Act No. 7 of 2007)

TO

Gecko Mining (Pty) Ltd
P.O Box 81307, Olympia, Windhoek, 8 Sinclair Street, Eros.

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Nonidas Gravel Mining Activities in the Swakopmund Townlands Area,Erongo Region.

MINISTRY OF ENVIRONMENT AND TOURISM
P/Bag 13306
Windhoek, Namibia
2019 -10- 29
Office of the Deputy Environmental Commissioner

DEPUTY ENVIRONMENTAL COMMISSIONER

Issued on the date: 2019-10-29

Expires on this date: 2022-10-29

(See conditions printed over leaf)

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Reuse
Recycle

This certificate is printed without erasures or alterations

CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment andTourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project
4.

ENVIRONMENTAL MANAGEMENT PLAN

FOR THE

GRAVEL MINING ACTIVITIES AT NONIDAS

IN THE SWAKOPMUND MUNICIPAL AREA

September 2015

Assessed for:

gecko MINING

Assessed by

Chitalu Shikaputo

ENVIRONMENTAL MANAGEMENT PLAN

FOR THE

GRAVEL MINING ACTIVITIES AT NONIDAS

IN THE SWAKOPMUND MUNICIPAL AREA

September 2015

Assessed for:

Assessed by

Chitalu Shikaputo

Authors	Chitalu Shikaputo	
Version	01	
Client	Philip Hooks	
Date	10.10.2015	
Version	02	
Reviewer	Dr. Mutjinde Katjiua	
Date	16.10.2015	
Reference	Shikaputo C., 2015. Environmental Management Plan for Gravel Mining Activities at Nonidas in the Swakopmund Municipal Area. Assessed for Gecko Mining (Pty) Ltd.	

ABREVIATIONS

EA	Environmental Audit
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
ECP	Environmental Control Procedure
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ERA	Environmental Risk Assessment
ERP	Emergency Response Plan
HSE	Health Safety Environment Officer
MD	Managing Director
MET	Ministry of Environment & Tourism
MME	Ministry of Mines & Energy
MoS	Swakopmund Municipality
MSDS	Materials Safety Data Sheet
PM	Project Manager
SEA	Strategic Environmental Assessment

1. Introduction

1.1 Environmental Management Plan (EMP) Objectives

The main purpose of the Environmental Management Plan (EMP) is to provide a strategy for environmental protection whereby all the activities associated with Gecko Mining (Pty) Ltd (proponent) operations at Nonidas to do gravel mining from excavation, sieving, loading and haulage, are controlled and monitored. To ensure that time and national resources are not wasted and that problems occurring during the gravel mining operations are identified and rectified to prevent damage to the environment. **Figure 1** below renders the location of the gravel mining site.

The present EMP addresses specific impacts identified in the EIA Report and the actions required to provide measures for the mitigation and management of potential negative impacts and the optimization of potential positive impacts that may be associated with the gravel mining project and the decommissioning once the activity has been completed.

If some issues have been overlooked, the plan must be amended in consultation with the proponent and regulatory authorities. The EMP therefore aims to ensure that:

- gravel mining operations are managed efficiently and effectively to reduce or avoid negative impacts and enhance positive impacts of the operations;
- precautions against damage are considered timeously and claims are put into action speedily;
- information flow between all responsible persons is optimised to ensure all are aware of their particular responsibilities;
- involve the local community by employing unskilled and / or skilled labour;
- maintain the integrity of the gravel mining area

The EMP will be effectively implemented, if:

- mitigation measures are successively implemented during operations, construction and decommissioning;
- the responsibilities are assigned to skilled individuals, groups, and government agencies;
- EMP guidelines are properly communicated to all responsible parties;
- training for implementing mitigation measures is carried out when personnel require such training;
- the monitoring programmes are adhered to;
- progress, training and monitoring reports are submitted to management and relevant government authorities

The Environmental Management Act and Regulations require that an environmental management plan be developed. All developmental projects in Namibia should conduct an Environmental Impact Assessment and thus develop an Environmental Management Plan after which an application for an Environmental Clearance Certificate will be made (see Legal Section of EIA Report).

As was stated in the Scoping EIA Report, the areas that have been earmarked for gravel mining operations fall within areas of low biodiversity, and therefore is not regarded as a sensitive area. There is little vegetation on the project site. There are no residents in close proximity to the project site. Noise and construction related activities will therefore not be a concern.

The proponent recognises the attempts of the coastal Strategic Environmental Assessment (SEA) to provide guidelines for the conservation of Namibia's natural heritage and biodiversity and has integrated measures into the EMP for conservation of various biodiversity aspects. Accepted mitigation measures concerned with the management of gravel mining operations activities are to:

- delineate no-go areas that conserve biodiversity;

- earmark sufficient funds for the eventual decommissioning of gravel mining operations so that appropriate rehabilitation will be carried out;
- establish a plan layout for seed-bearing topsoil stockpiles which allows for effective re-establishment of desert riverine plant species;
- reduce risk of damage to infrastructure and equipment during gravel excavation, sieving, loading and haulage;
- maintain sustainable operating practices e.g. decommissioned site rehabilitation, waste removal and recycling, remediate contaminated soil

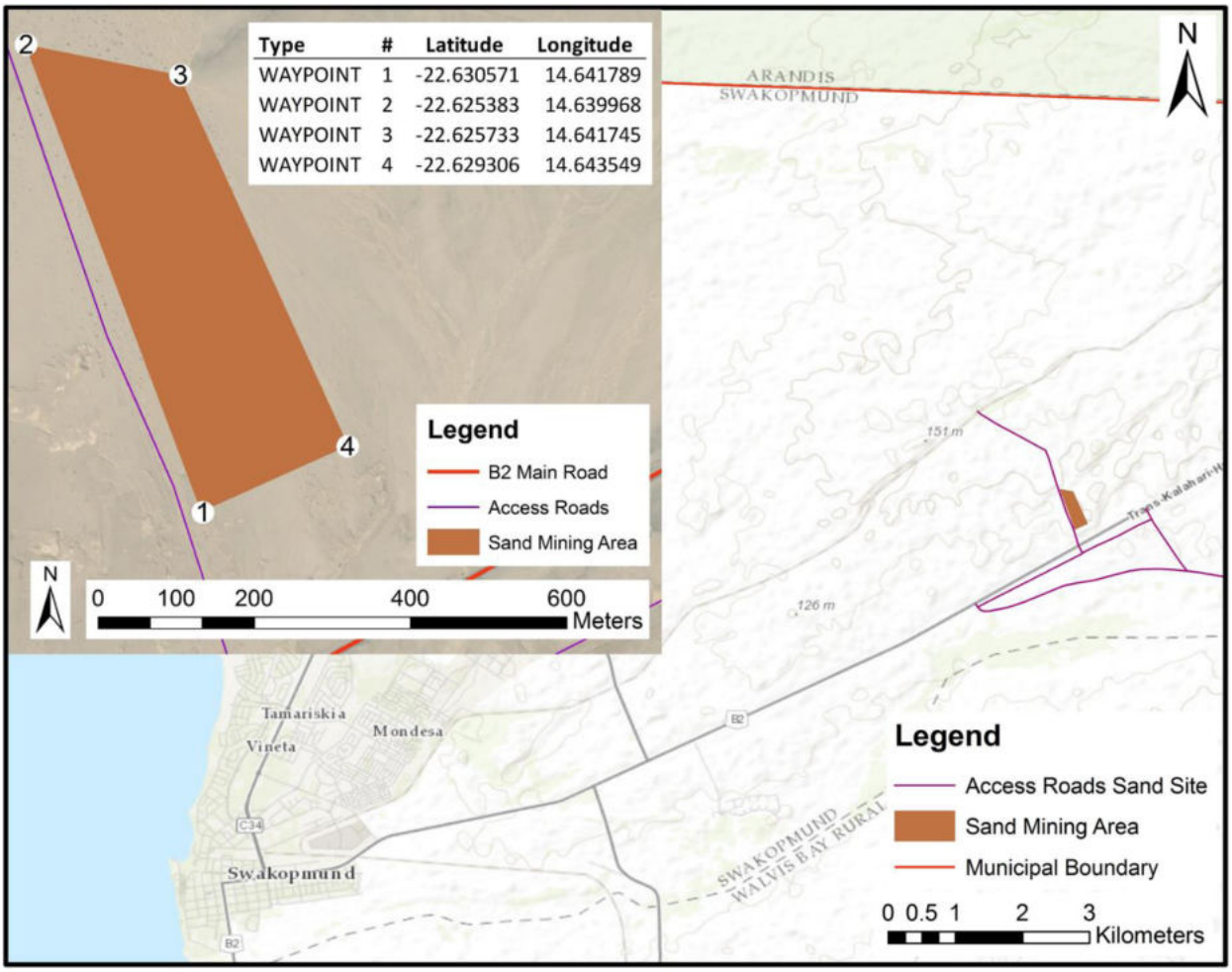

Figure 1: Location of the gravel mining site

2. Environmental Impacts

The key environmental impacts identified and discussed in the Scoping EIA Report for gravel mining were identified by site visits, consultation with the proponent and a scoping assessment.

2.1 Potential Key Positive Environmental impacts

The following key issues and potential positive impacts associated with the gravel mining operations are:

- environmental awareness created for all the gravel mining operational personnel through training;
- implementation of environmental management measures to mitigate negative impacts ;
- the gravel mining operations help to create jobs and offer short / medium term employment;
- improve the standard of living of the proponent's employees;

2.2 Potential Key Negative Environmental Impacts

- potential air pollution from vehicle fumes and during windy conditions from dust generating activities; **insignificant**
- potential decrease in aesthetic value of the area earmarked for mining as vegetation and top soil will be cleared; **mitigation through rehabilitation of surface substrate**
- potential increases in personnel resulting in increased waste and sewerage generation; **negligible**
- potential increase of soil erosion as a result of stripping of top soil during the gravel mining; **mitigation through slope rehabilitation**
- potential nuisance factor from noise creation may increase; **negligible**
- potential habitat alteration at the mining site; **significant and requires restoration activities through rehabilitation of surface substrate**

2.3 Assessment of Significant Environmental Impacts

The potential impacts resulting from the gravel mining operations within the Nonidas area were evaluated in the EIA Report. The suggested mitigations, if implemented, for potentially negative impacts will reduce the impacts on the biophysical and socio-economic environment so that their significance is negligible. The mitigation measures are included in the EMP implementation guidelines below.

3. Responsibilities, Capacity Building and Training Requirements

3.1 Responsibilities

The main stakeholders that are responsible for specific aspects of the EMP's implementation or to whom the responsibility reports:

Officer Bearers

- The **Proponent**- Gecko Mining (Pty) Ltd; assigns a suitably qualified employee as **Project Manager (PM)** that oversees the **Environmental Control Officer (ECO)** and is ultimately accountable for the implementation of the EMP.
- The **Environmental Assessment Practitioner (EAP)**
- The **Environmental Control Officer (ECO)**

Competent Authorities

- Environmental Authority - Ministry of Environment & Tourism (**MET**)
- Swakopmund Municipality **(MoS)**

The roles and responsibilities of each individual / party are summarised in **Table 1.**

3.2 ECO - Detailed Responsibilities

- responsible for assessing compliance to the EMP;
- implementation of the Environmental Management System (EMS);
- coordination, monitoring and consultation with stakeholders and personnel, including the promotion of environmental management competence and providing risk assessment expertise;
- undertake Environmental Risk Assessments (ERAs);
- set environmental objectives and targets;
- monitoring of systems to ensure compliance to legislation and company policies;
- to facilitate updating of the environmental management process and ascertaining the state of environmental risk and performance;
- compile monthly reports;
- ensuring that all personnel undergo environmental awareness induction training as per company environmental standards;
- coordinate internal and external environmental audits

3.3 Capacity Building and Training Requirements

The proponent is responsible to ensure all personnel are trained on all the company Health, Safety and Environment (HSE) policies relevant to the site. The site equipment technical team must be trained to maintain the gravel mining site. Equipment manuals must be supplied and the supplier data sheets. HSE manuals must be available on site at all times. Material Safety Data Sheets (MSDS) are to be available for quick reference.

Where the capacity of the personnel is insufficient the proponent must take up the responsibility to build the capacity especially where compliance to HSE issues are lacking. For this EMP to be successful, compliance monitoring is essential. Reporting the data from the monitoring to the environmental authority will be necessary in order to show that capacity building and training has been carried out.

Table 1. Roles and responsibilities of each individual and/or party for the implementation of the Nonidas Gravel Mining EMP

PARTY	ROLE	RESPONSIBILITY & ACCOUNTABILITY
Proponent - Project Manager (PM)	The proponent bears the ultimate responsibility for gravel mining operations, and is thus responsible for environmental performance.	Must be informed of environmental issues and impacts of the gravel mining operations and the resultant effect that such activities have on the environment; Will be responsible for control and management of all the gravel mining operations. The **PM** must be aware of all specifications, legal constraints and procedures pertaining to the project with regards to the environment. The **PM** must ensure all stipulations within the EMP are communicated and adhered to by employees.
EAP	Undertake Environmental Impact Assessment and Generate a Draft Environmental Management Plan	To complete EIA and EMP reports; Possibly undertake periodic external environmental audits (other independent and suitably qualified persons other than the EAP can be assigned these responsibilities).
ECO	Monitor the implementation of the EMP as well as to identify potentially detrimental impacts not identified in the EMP so that it can be reviewed and updated.	Brief the **PM** about the requirements of the EMP; Provide technical advice relating to environmental issues to the **PM** and; Undertake periodic audits of the effectiveness of the environmental specifications on the site; Keep a record of activities on site with a site diary and site photographs.
MET / Swakopmund Municipality	National / Local Environmental Enforcing Agents	Enforcement of environmental regulations; enforcing EMP compliance; conduct six monthly inspections as well as review project environmental and incident reports

4. Environmental Management System

The EMP guidelines provide a framework for creating a process and document control system. This system is commonly referred to as an Environmental Management System (EMS). This system includes the aspects of monitoring and reporting which are outlined in the EMP guidelines. Some of the EMS documentation elements are described below. The detailed documentation for every environmental aspect needs to be developed by the various officers. There may be considerable overlap between the health, safety and environment fields and it is advised that these three management systems be integrated especially where human and material resources are limited. The ECO can fulfil all three roles.

The ECO must take up the training, monitoring and reporting responsibility. It is important that the monitoring of the necessary environmental aspects of the gravel mining operations is undertaken. The main purpose of monitoring is to ensure that the prescribed mitigation measures / actions in the EMP are complied with. The ECO officer should write up a summary monitoring report on a monthly basis. This can be compiled from the environmental control data sheet records. The environmental control data sheets need to be compiled in conjunction with the Environmental Control Procedure (ECP).The specialist health, safety and environment personnel should write up the ECPs for the various measures, controls and processes. Thereafter the environmental control data sheets can be drafted and used on a daily, weekly or ad-hoc basis depending on the need. This data is used to write up the monthly environmental report.

Compliance with the EMP can be measured by means of periodic internal environmental audits. It is recommended that an internal environmental audit be undertaken every year. The first audit can take place 1 year after the receipt of the environmental clearance certificate. An annual environmental audit (EA) report can be compiled from the monthly monitoring reports. The proponent's supervisor will assess if the Contractor is compliant with the EMP's guidelines and contract.

Whilst many of the anticipated environmental impacts have been identified in the EIA, there are possibly other impacts that could arise from the gravel mining operations. These should be assessed during the annual review process and included in any EIA updates.

5. EMP IMPLEMENTATION GUIDELINES

The following section (**Tables 2 to 4**) describes the main activities necessary to mitigate and/or enhance the potentially significant environmental and socio-economic impacts during implementation of each aspect of gravel mining operations at the site. This document may need to be periodically reviewed and updated due to new insights or operational changes to ensure that all the environmental impact aspects are included.

The mitigations and monitoring actions for each of the environmental impact aspects of gravel mining operations at the site have been subdivided for each aspect of the mining operations. This gravel mining operational EMP categorises aspects into loosely defined phases of planning, operational, construction and decommissioning phases. These phases are applicable in the following ways:

- activities that will take place during the gravel mining operations fall within the **operational phase**;
- elements of the **planning phase** apply to the current Scoping EIA Report preparation, the review process, permit and certificate application / renewal periods;
- the mobilisation of equipment and the construction of access roads if necessary is covered under the **construction phase**;
- should the gravel mining operations draw to a close then the **decommissioning phase** section will be applicable in particular the rehabilitation of the gravel mining site

Table 2. Implementation guidelines for gravel mining operations (excavation, sieving, loading and haulage) during planning, construction, operational and decommissioning phases (Authority refers to the responsible person / party)

NONIDAS GRAVEL MINING SITE (excavation, sieving, loading and haulage)				
Nature of Environmental Impact/Aspect/Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
PLANNING PHASE				
Biodiversity Impacts Potential damage to the natural environment resulting in loss of biodiversity.	➢ Undertake EIA study; ➢ Write up Scoping EIA Report; ➢ Draft an EMP; ➢ Plan an EMS; ➢ Renewal or Update EIA Report	Record of Decision / Environmental Clearance Certificate / file approved EMP documents. Schedule to develop EMS documentation on file.	PROPONENT / EAP	MET
Public Consultation Awareness of public and government departments regarding the proponents operations and routine construction plans for gravel mining operations.	Public consultation with all key stakeholders was deemed necessary for the Baseline EIA Report because of the potentially unsustainable nature of the gravel mining operations	Records of comments and concerns incorporated into the EIA Apply for Environmental Clearance Certificate (ECC)	PROPONENT / EAP	MET
Operational Design & Lifespan Inadequate planning poses a risk to the sustainable gravel mining operations.	Gravel mining operations must be planned and designed with minimal impact on the environment and pressure on natural resources e.g. use of water, waste disposal; communicate plans to the competent authorities. The permit rules must be incorporated into the EMS. Renew gravel mining permit annually. Renew ECC every 3 years.	Plans and amended plans are to be filed. Permits on file. Renewal reminders in calendar.	PROPONENT / EAP	MET / MoS
Visual Impacts Inappropriate siting of seed-bearing topsoil stockpiles visible along B2 road resulting in negative visual impact. Impacts are negligible or insignificant.	Mitigations need to be planned. The infrastructure should not be very visible to the public travelling along the B2 road. Roadside seed-bearing topsoil stockpiles are to be kept at a 200m distance from the B2 road to ensure public safety and to reduce negative visual impact.	Visual baseline in the form of a photo survey should be undertaken. Correspondence from Municipality on file.	PROPONENT / EAP	MET
Noise Impacts Noise resulting from vehicular activities affecting public and company personnel.	Maintenance plans for all equipment will ensure that noise impacts for personnel and the public result in negligible health and nuisance effects. Health and Safety manual to include requirements that personnel are to wear ear plugs when operating or maintaining machinery.	Noise monitoring plan in the form of a complaints register is to be created and placed on file. Occupational health policy is on file.	PROPONENT	MoS

NONIDAS GRAVEL MINING SITE (excavation, sieving, loading and haulage)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
CONSTRUCTION PHASE (mobilisation of the excavator and loader to the gravel mining site; access road construction)				
Traffic Impacts Movement and presence of vehicles (bulldozers, front-end loaders, trucks) on and around the B2 road presents risks of accidents due to collisions. This poses risks to personnel safety and asset security.	➢ coordinate movement of vehicles; ➢ operational distances to be maintained; ➢ maintain the integrity of roads; ➢ training of personnel; ➢ excavator and loader are not parked on site overnight	**Performance Indicators:** ➢ Operators certificates on file; ➢ File any incident reports; ➢ Schedule of road maintenance on file	ECO / PM	MoS / MET
Visual Impacts Visual impact of discarded litter and the increase in the number of gravel stockpiles at the site.	Ensure site area is organised and clear of solid wastes; Restricted access for public safety reduces exposure of the gravel mining operations to the general public; access to actual excavation area is prohibited.	Carry out audits and report findings;	ECO / PM	MoS / MET
Noise Impacts Noise impact of construction activities alongside the road is expected to be negligible provided industry standards are maintained. Construction activities entails the mobilisation of excavators and loaders to the site.	**No noise measurements** as part of a monitoring programme are deemed necessary as the mining site is 200m north of the B2 highway. Maintain all sound proofing, silencers and other equipment in good working order to minimise excess noise. If complaints regarding noise are received investigate and, if required, implement further noise reduction measures.	**Monitoring:** ➢ keep a register of all complaints received and remediation action taken; ➢ compile all information in an annual report **Performance Indicator:** ➢ Number of registered complaints	ECO / PM	MoS / Ministry of Labour
Air Quality Dust may be generated during the construction phase but this dust is expected to be dependent on the ambient weather conditions. Other companies use the same gravel access road.	It is recommended that regular dust suppression be included during construction, when dust becomes an issue, dust generating construction activities should be limited. Personnel are to be issued with dust masks for health reasons when needed. All vehicles transporting material that can be blown off (e.g. soil, rubble.) must be covered with a tarpaulin when travelling on the B2 highway	Regular visual inspection. A complaints register must be maintained, in which any complaints from the community must be logged. Complaints must be investigated and, if appropriate, acted upon.	ECO / PM	MoS / Ministry of Labour

NONIDAS GRAVEL MINING SITE (excavation, sieving, loading and haulage)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
OPERATIONAL PHASE				
Ground Water Contamination The risk of oil, grease, fuel related pollution reaching groundwater is very low as no toilets or maintenance workshops will be placed on site. Accidents may occur. In which case the recommended mitigations and responses should be employed.	**Prevention:** ➢ No storage of potential pollutants is allowed on site ➢ Ensure vehicles and equipment are well maintained so that no spills occur on site **Mitigation:** ➢ Devise safe handling procedures. ➢ Communicate response procedures for accidental spills; ➢ Ensure all equipment is available for dealing with accidental spills; ➢ Create an Emergency Response Plan (ERP); ➢ File MSDS in ERP; ➢ Provide awareness training ➢ Remediate contaminated soil at a designate place off site	**Administration of EMS documentation:** ➢ ERP on file; ➢ ERP training checklists filed; ➢ photo surveys on file; ➢ records of soil remediation with final quality check	ECO / PM	MoS / MET
Solid Waste Pollution Pollution due to solid waste is unlikely to occur as no sources of pollution will be brought to site.	**Prevention:** ➢ No waste is brought to site ➢ Operators are to remove any personal waste at the end of each day and dispose of it at their homes. **Mitigation:** ➢ Collect windblown waste that enters property ➢ Transport waste to nearest disposal site; ➢ Ensure that no material used at the site is left behind and enters the surrounding environment; ➢ Prevent littering by staff at work sites through training; ➢ Provide separate bins for hazardous / polluting materials and mark these clearly; ➢ No storage of hazardous / polluting materials on site ➢ Burning / burying of waste is prohibited	**Monitoring:** ➢ operator awareness training is provided regarding waste identification and waste removal; ➢ **monthly** inspection of waste observed at and around the site; ➢ compile all monitoring information in an **annual** report **Performance Indicators:** ➢ availability of report on file; ➢ presence of litter within the area and surrounding land; ➢ training checklists filed; ➢ waste collection reports are filed	ECO / PM	MoS / MET

NONIDAS GRAVEL MINING SITE (excavation, sieving, loading and haulage)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
OPERATIONAL PHASE				
Traffic Impacts Movement and presence of vehicles (bulldozers, front-end loaders, trucks) on and around the B2 road presents risks of accidents due to collisions. This poses risks to personnel safety and asset security.	➢ coordinate movement of vehicles; ➢ operational distances to be maintained; ➢ maintain the integrity of roads; ➢ training of personnel; ➢ excavator and loader are not parked on site overnight	**Performance Indicators:** ➢ operators certificates on file; ➢ file any incident reports; ➢ schedule of road maintenance on file	ECO / PM	MoS / MET
Visual Impacts Visual impact of discarded litter and the increase in the number of gravel stockpiles at the site.	Ensure site area is organised and clear of solid wastes; Restricted access for public safety reduces exposure of the gravel mining operations to the general public; access to actual excavation area is prohibited.	Carry out audits and report findings;	ECO / PM	MoS / MET
Noise Impacts Noise impact of operational activities alongside the road is expected to be negligible provided industry standards are maintained.	**No noise measurements** as part of a monitoring programme are deemed necessary as the mining site is 200m north of the B2 highway. Maintain all sound proofing, silencers and other equipment in good working order to minimise excess noise. If complaints regarding noise are received investigate and, if required, implement further noise reduction measures.	**Monitoring:** ➢ keep a register of all complaints received and remediation action taken; ➢ compile all information in an annual report **Performance Indicator:** ➢ number of registered complaints	ECO / PM	MoS / Ministry of Labour
Air Quality Dust may be generated during the operational phase but this dust is expected to be dependent on the ambient weather conditions.	It is recommended that regular dust suppression be included during construction, when dust becomes an issue, dust generating operational activities should be limited. Personnel are to be issued with dust masks for health reasons when needed. All vehicles transporting material that can be blown off (e.g. soil, rubble.) must be covered with a tarpaulin when travelling on the B2 highway	Regular visual inspection. A complaints register must be maintained, in which any complaints from the community must be logged. Complaints must be investigated and, if appropriate, acted upon.	ECO / PM	MoS / Ministry of Labour

NONIDAS GRAVEL MINING SITE (excavation, sieving, loading and haulage)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
OPERATIONAL PHASE				
Substrate Stability & Soil Erosion The whole gravel mining site is situated within a dry water course. The vegetation cover increases the ability of the watercourse to prevent soil erosion only marginally. Average annual rainfall is less than 50mm. If rain was to cause the river to flow the transport of sediment is inevitable. The amount of erosion would be dependent on the amount of rain. Additionally the catchment area is relatively small. The stockpiling of the seedbearing top soil along the sides of excavations and the excavation of the gravel does expose the substrate. However, the increase in the propensity for water flow to erode the soil is negligible compared to the baseline propensity. Soil erosion due to wind is dependent on wind speed and this cannot be prevented in a desert environment.	**Prevention:** ➢ soil erosion by water or wind cannot be prevented **Mitigation:** ➢ limit the excavations and access roads to within the boundaries of the project site if possible; ➢ vegetation and top soil clearance must be carried out piecemeal; ➢ extension of the excavation area should be done in stages so that old areas are rehabilitated concurrently; ➢ top soil removed for vegetation clearance must be stripped and stockpiled alongside the excavated areas; ➢ excavation depth must stop at a depth of 2m above the groundwater table (stipulated in permit requirements); ➢ the slope of the rehabilitated areas should be shallow so as to reduce the speed of flowing water and thereby reduce soil erosion; ➢ top soil is replaced on the surface of the levelled area that is no longer to be excavated	Seedbearing top soil stockpiles are established documented by photographs. Top soil shall be used during the rehabilitation process to ensure recovery of vegetation after the activity has been completed Rehabilitated areas are documented by photos at 6 monthly periods to illustrate rates of vegetation re-establishment.	ECO / PM	MoS / MET
Health & Safety Risk to health and safety of employees	Ensure that all operators and or maintenance crews on-site are familiar with the company's ERP or equivalent (Emergency Response Guide 2008). Conduct thorough safety training to personnel about the use of protective clothing, footwear, gloves and belts; safety goggles and shields; dust masks and respirators; the correct handling of materials and the safe use of all equipment. First aid treatment, emergency treatment and medical assistance must be available immediately.	A register must be maintained of all training provided to staff. A register must be maintained for all safety equipment and medical supplies kept on site. This should include date of purchase and date of service/replacement for items that can expire or deteriorate with age. A register of all incidents must be maintained on a daily basis. This	ECO / PM	Ministry of Labour / MoS

NONIDAS GRAVEL MINING SITE (excavation, sieving, loading and haulage)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
OPERATIONAL PHASE				
	Regular inspections must be carried out to inspect and test fire-fighting equipment. Fire-fighting equipment must be readily accessible. Fire prevention considerations include fire pumps, and emergency fuel-flow stopping devices. Provide medical assistance where needed.	should include measures taken to ensure that incidents do not repeat. Compile all monitoring information in an annual report.		
Resource Sustainability Reduction in gravel availability due to over extraction of the gravel. This could occur.	Monitor the gravel levels within the gravel mining site. Remove only that which is needed. Decommission and rehabilitate the site when the resource is depleted. Look for a new gravel site if necessary.	Photograph the excavations every 6 months, monitor and assess the volume of resource that is still available.	ECO / PM	MoS
Employment Opportunities Positive impact of short and long term employment for locals	Maximise employment of local labour where possible Careful attention to the recruitment of workers to ensure it is fair and also does not generate conflict.	Include the employee statistics in the annual audit showing long term trends.	PROPONENT	Ministry of Labour / MoS

NONIDAS OPERATIONS (excavation, sieving, loading, accessory works)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
DECOMMISSIONING PHASE (demobilisation and site rehabilitation)				
Though gravel mining does fall under the Minerals Act and does not require a licence to be issued by the Ministry of Mines & Energy the section 54 of the Act provides guidelines for best practice. **Risks associated with abandoning a mine without rehabilitating according to an approved plan are relevant.** **MoS Contractual Agreements** The proponent's failure to meet the obligations as stipulated in the municipal contractual / permit agreement with regards to rehabilitation could incur penalties. **Point 11** of the permit states: 'should an operator stop the sand/gravel mining activities before the expiry of the permit, the area mined must be rehabilitated to its original condition and to the satisfaction of the MoS. Notice of termination of activities must be given in advance to the MoS. This shall include interalia, that all slopes shall be reduced to minimum 1:5 slop, and the floor of the pit reduced to a single approximately flat area to the approval of MoS.	**Point 22** of the municipal permit states that 'the MoS shall oblige the permit holder to restore, at the permit holder's expense, the state of affairs that existed before a permit was issued, if doing so is reasonable and practicable under the circumstances or, enter to an agreement with the permit holder or any other person for maintenance of excavation works' In light of point 11 and 22 of the permit it is advised to rehabilitate areas as the excavation of gravel progresses from area to area. Suggested mitigations are as follows: ➢ limit the excavations and access roads to within the boundaries of the project site if possible; ➢ vegetation and top soil clearance must be carried out piecemeal; ➢ extension of the excavation area should be done in stages so that old areas are rehabilitated concurrently; ➢ top soil removed for vegetation clearance must be stripped and stockpiled alongside the excavated areas; ➢ excavation depth must stop at a depth of 2m above the groundwater table (stipulated in permit requirements in **point 14**); ➢ the slope of the rehabilitated areas should be shallow so as to reduce the speed of flowing water and thereby reduce soil erosion; ➢ top soil is replaced on the surface of the levelled area that is no longer to be excavated	At the time of closure and abandonment the proponent must rehabilitate the site to the state stipulated by the MoS at the time of site abandonment and or permit expiry. The following ➢ removal of all movable assets i.e. plant equipment; ➢ the **rehabilitation** has been completed as per MoS requirements; ➢ the site closure is signed off with correspondence to and from MoS has been filed	PROPONENT	MoS

Table 3. Implementation guidelines for *haulage of gravel* during planning, construction, operational and decommissioning phases. (Authority refers to the responsible person / party)

GRAVEL TRANSPORT				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
PLANNING PHASE				
Location of access road resulting in negative impact on the environment. Existing roads are used and impacts are negligible.	The current site has an access road that has been established and is operational Plans to locate new access roads needs to be given permission from competent authorities.	Maintain existing access road. Approved plans and permits have to be kept on file.	PROPONENT	MoS
Use of B2 road for haulage to Swakopmund.	Apply for permits as per vehicle type.	Permits and discs issued to operators and kept with the vehicle. Permits to be filed.	PROPONENT	MoS
CONSTRUCTION PHASE (mobilisation)				
Increased risk for road accidents with increased vehicle movements.	Check the road worthiness of all vehicles and licences of the vehicles and operators are valid.	Copies of licences are on file Intersection is fully functional	PM / ECO	MoS
OPERATIONAL PHASE				
Road safety for road users of B2 road for haulage to Swakopmund.	➢ Maintain vehicles ➢ Obey traffic rules ➢ No over loading ➢ Ensure licenses remain valid (vehicles and operators)	Monitoring reports should be filed Non-compliances reported and should be filed	PM / ECO	MoS

GRAVEL TRANSPORT				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
Generation of dust from high traffic volumes on haul road is expected to be negligible.	The B2 road is well maintained. Very little dust is created from driving on these roads. High vehicle speed increases the amount of dust stirred up from unpaved roads. Lowering the speed of the vehicle can reduce emissions significantly. The trucks will not travel above the speed limit as per the trucks payload type and the permit stipulations. All vehicles transporting material that can be blown off (e.g. soil, rubble.) must be covered with a tarpaulin when travelling on the B2 highway.	Register of complaints should be filed.	PM / ECO	MoS
DECOMMISSIONING PHASE				
Access roads to and haulage roads within the gravel mining area could pose risk to public.	Roads must be left in good condition during demobilisation.	Inspection report on file.	PROPONENT / ECO	MoS

Table 4. Implementation guidelines for sanitation and the maintenance of equipment (vehicular and stationary) during planning, construction, operational and decommissioning phases. (Authority refers to the responsible person / party)

MAINTENANCE (sanitation, equipment, vehicle and machinery maintenance)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
PLANNING PHASE				
No servicing of vehicles occurs within the gravel mining area.	Plans to service vehicles within the area earmarked for gravel mining should not be allowed except in emergencies.	Plan on file	PROPONENT	MoS
No employees are accommodated at the gravel mining site	No mitigation needed	Plan on file	PROPONENT	MoS
Waste disposal sites	Weekly removal of waste to Swakopmund refuse dump. Materials should not be incinerated on site.	Waste Management Plan on file	PROPONENT	MoS
Machinery maintenance poses risks of pollution.	No scheduled maintenance of vehicles is to take place on site.	Plan on file	PROPONENT	MoS
Sewerage facilities on site should be portable.	If portable sewerage facilities are placed on site they must be serviced regularly and so sewerage may be discharged into the environment.	Waste Management Plan on file	PROPONENT	MoS

MAINTENANCE (sanitation, equipment, vehicle and machinery maintenance)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
CONSTRUCTION PHASE				
Loss and/or destruction of natural areas	Confine construction activities to the demarcated mining area.	Monitor compliance and file report	ECO	MoS
Sanitation	Ensure adequate sewage and sanitation management for construction workers. The Proponent may provide suitable sanitary arrangements at the site. A minimum of 1 toilet will be provided per 15 persons at each working area. The Proponent must maintain, keep clean, neat and hygienic all site sanitation facilities. The effluent containment system must be inspected for leakages on a regular basis and any leakages must be attended to immediately.	Monitor compliance and file report	ECO	MoS
Solid waste disposal	Manage solid waste disposal. All solid and chemical wastes that are generated must be removed	Monitor compliance and file report	ECO	MoS
Hazardous waste disposal	Ensure spillage does not occur.	Hazardous waste certificate from hazardous waste dump in Walvis Bay on file.	ECO	MoS
OPERATONAL PHASE				
Pollution of groundwater supplies	See sections above referring to sanitation, solid and hazardous waste disposal.	Monitor and assess compliance and file reports.	ECO	MoS
Servicing of vehicles on site. Oils and lubricants penetrating soil surface. No routine maintenance may occur on site.	No vehicles must be serviced within the area except in case of emergencies. Catch trays must be installed.	Monitor maintenance areas for compliance and file reports.	ECO	MoS

MAINTENANCE (sanitation, equipment, vehicle and machinery maintenance)				
Nature of Environmental Impact / Aspect / Risk	**Mitigation / Enhancement Measure**	**Monitoring Measure / Control / Tool / Performance Indicator**	**Responsible / Implementing Authority**	**Monitoring / Competent Authority**
Oil or diesel spills	In the event of an oil/fuel spill, the spill must be cleaned up immediately and deposited at a registered hazardous waste landfill site in Walvis Bay. Refer to ERP.	Emergency Response Plan on file. Hazardous waste disposal certificate on file.	ECO	MoS
Inappropriate disposal of waste around mining site.	Designate restricted places for eating in working areas, and provide adequate refuse bins. Implement Waste Management Plan	Monitor compliancy and report on file.	ECO	MoS
Pressure on local water resources. Water for drinking purposes must be imported to the site.	Implement water saving strategies.	Monitor water use and report on file.	ECO	MoS
DECOMMISSIONING PHASE				
Contamination of the gravel mining area if accessory works are abandoned.	Remove all sources of contamination from the mine site. Follow the gravel mining area rehabilitation plan.	Monitor compliancy to rehabilitation plan and file reports. Submit final environmental audit report to competent authorities.	PROPONENT	MoS / MET