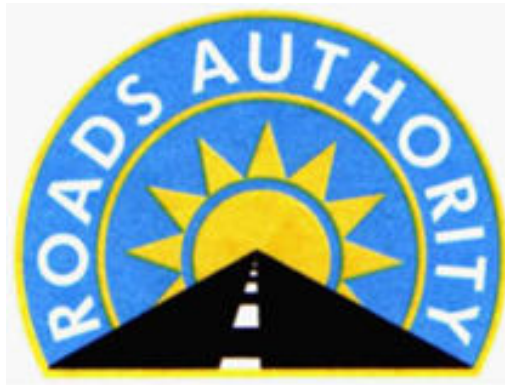


**ENVIRONMENTAL PERFORMANCE ASSESSMENT REPORT FOR CONTRACT
NO RA/CS-NP/04-2010: PROJECT PROPOSALS FOR PARTIAL
IMPROVEMENTS OF TR 2/1: WALVIS BAY –SWAKOPMUND AND THE
UPGRADING TO FREEWAY**



Prepared for:

- **VKE CONSULTING ENGINEERS NAMIBIA**
 - 54 Bismarck Street, Namibia
 - Phone: +264 61 237 642
 - Fax: +264 61 233 534

Prepared by:

- **ENVIRO MANAGEMENT CONSULTANTS NAMIBIA**



- P O Box 11574
 - Windhoek
- Tel: (061) 400 384
- Enquiries: R du Toit

▪ **JUNE 2023**

1. ENVIRONMENTAL MANAGEMENT PLAN.....2

1.1 Generic Environmental Mitigation Measures..... 3

1.2 Conclusion.....14

1. ENVIRONMENTAL MANAGEMENT PLAN

This Environmental Performance Assessment Report serves as a working document for monitoring the successful integration of environmental and social management actions during construction of the above road. It is the responsibility of the environmental consultant to be actively involved in overseeing the integration of environmental and social issues during the construction phase.

Enviro Management Consultants Namibia (EMC Namibia) conducted a site visit on the 28th June 2023. The purpose of the site visit was to investigate the areas where construction activities are taking place and to determine if the mitigation measure mentioned in the ESMP are enforced as to prevent or reduce any negative environmental impacts that may result due to these activities.

The column "Comments" in the table that follows provides the comments on compliance to the EMP. Text highlighted in **red** show actions required, which will be followed up at the next site meeting. For the sake of this report, the text highlighted in **blue** indicates sufficient remedial activities taken by the contractor to rectify the non-compliance.

The proceeding went as follows during the site visit:

A dedicated vehicle was made available for a site inspection. Three documents are used during the site inspection, they include the approved EMP, the previous monitoring reports (if any) and the activity list drafted from the previous site visits (if any). These documents served as the baseline information on which the site inspection and future recommendations are based.


The following resulted from the site visits and meetings.

1.1 Generic Environmental Mitigation Measures

(a) Site establishment

(i) Grey Water

All effluent water from the camp and office sites shall be disposed of in properly designed and constructed systems, situated so as not to adversely affect water sources (streams, rivers, pans, dams etc). Only domestic type wastewater shall be allowed to enter these systems.

COMMENTS	PICTURES
Compliant to the ESMP.	

(ii) Heating and cooking fuel

The contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

COMMENTS	PICTURES
Compliant to the ESMP.	

(b) Sewage treatment

Particular reference attention shall be given to the treatment of sewage generated at the offices, laboratories and accommodation as well as at all localities on the site where there will be a concentration of labour. The contractor shall be entirely responsible for enforcing the use of toilets and latrines. Use of the veld for this purpose shall not under any circumstances be allowed. Sanitary arrangements must satisfy local authority and other legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: connection to municipal systems, septic tanks with soak-aways or conservancy tanks, dry-composting toilets such as "enviro loos", or the use of chemical toilets. The type of sewage treatment will depend inter alia on the geology of the area selected and the

duration of the contract. Should a soak-away system be used, it shall not be closer than 80 metres from any natural water course or water retention system.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever staff is employed on the Works, but outside areas susceptible to flooding.

Outside toilets shall be provided with doors and locks and shall be secured to prevent them from blowing over. The contractor shall arrange for regular emptying of toilets and conservancy tanks and for maintaining latrines in a clean, orderly and sanitary condition.

COMMENTS	PICTURES
The sewage management is at acceptable levels.	

(c) Waste management

The contractor's intended methods for waste management and waste minimisation shall be implemented at the outset of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

(i) Solid waste

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse. Disposal of solid waste shall be at a licensed landfill site or at a site approved by the engineer in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be burned or buried anywhere on the site, including the approved solid waste disposal site.

COMMENTS	PICTURES
<p>Waste management is up to standard at the camp. The contractor shall make sure to remove un-usable materials on a regular basis.</p>	
<p>Large quantity of used tires are present at the camp and should be disposed of.</p>	
<p>Old waste must be removed alongside the road.</p>	

Waste is well managed but the bins shall be emptied on a regular basis as to prevent overflowing.



(ii) Litter

No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.


Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of refuse. At all places of work the contractor shall provide litter collection facilities for later safe disposal at approved sites.

COMMENTS	PICTURES
Prevention of littering is compliant to the ESMP requirements.	

(iii) Hazardous waste

Hazardous waste such as bitumen, oils etc. shall be disposed of in a licenced or otherwise approved landfill site. Special care shall be taken to avoid spillage of bituminous products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.

Under no circumstances shall the spoiling of bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected bituminous products shall be returned to the supplier's production plant. Any spillage of bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the engineer.

COMMENTS	PICTURES
Hazardous waste is well managed.	 <p>The top photograph shows a collection of various colored drums (blue, green, white) stored in a fenced area with blue corrugated metal walls. The bottom photograph shows four drums (two red and white, two red) contained within a concrete structure, likely a spill containment pit, in an outdoor area with a wire fence in the background.</p>

(d) Control at the workshop

The contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless whether it is serviced on the site (i.e. at the place of construction activity) or at a formal workshop.

(i) Safety

All necessary handling and safety equipment required for the safe use of petrochemicals shall be provided by the contractor to, and used or worn by, the staff whose duty it is to manage and maintain the contractor's and his subcontractor's and supplier's plant, machinery and equipment.

COMMENTS	PICTURES
Compliant to the ESMP.	

(ii) Hazardous Material Storage

Petrochemicals and other identified hazardous substances shall only be stored under controlled conditions. All hazardous materials shall be stored in a secured, appointed area that is fenced and has restricted entry. Storage of bituminous products shall only take place using suitable containers.

The contractor shall provide proof to the engineer that authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected the contractor shall furnish the engineer with details of the preventive measures he proposes to install in order to mitigate pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof that the alternative method proposed is acceptable to the relevant authority. The proposals shall also indicate the emergency procedures to be followed in the event of misuse or spillage that will negatively affect an individual or the environment.

COMMENTS	PICTURES
Petrochemical are stored to the ESMP requirements at the main camp.	

(iii) Oil and lubricant waste

Used oil, lubricants and cleaning materials arising from the maintenance of vehicles and machinery shall be collected in a safe holding tank. Water and oil should be separated in an oil trap. Oils collected in this manner shall be removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil

collected by a mobile servicing unit shall be stored in the service unit’s sludge tank and discharged into the safe holding tank.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.


COMMENTS	PICTURES
Storage of used oils and other hydrocarbon substances are being managed as required by the ESMP. This is applicable to both the camp and on route construction areas.	

(e) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products. In the event of a spillage, the contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill treatment lies with the contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to the DEO or to the engineer. The DEO will assess the situation in consultation with the engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil or water shall be determined by the contractor in consultation with the DEO and the engineer. Areas cleared of hazardous waste shall be re-vegetated according to the engineer’s instructions.

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice shall be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the engineer. The costs of containment and rehabilitation shall be for the contractor’s account, including the costs of specialist input.

COMMENTS	PICTURES
<p>Some spillage were noted alongside the road at the abandoned area where the sub-contractor vehicles are parked.</p> <p>These vehicles must be removed and the area rehabilitated.</p>	

(f) Earthworks and Layer works

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpiling, spoiling, treatment or batching for use in the permanent works or temporary works in the case of deviations. The contractor shall take cognisance of the requirements set out below.

(i) Quarries and borrow pits

The contractor's attention is drawn to the requirement that he must be in possession of an environmental clearance certificate issued by the Ministry of Environment and Tourism before entry into any quarry or borrow pit. This will include an EMP covering the establishment, operation and closure of the quarry or borrow pit. The conditions imposed by the relevant EMP are legally binding on the contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific EMP and these specifications the former shall apply. The cost of complying with the requirements shall be deemed to be included in the tendered rates.

COMMENTS	PICTURES
<p>It is imperative that the contractor drafts a borrow pit rehabilitation plan as to indicate the time-frames on which the various pits will be rehabilitated.</p>	

(ii) Spoil sites

The contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period. This shall include existing spoil sites that are re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the engineer. A photographic record shall be kept of all spoil sites for monitoring purposes, commencing before the site is used.

The use of approved spoil sites for the disposal of hazardous or toxic wastes shall be prohibited unless special measures are taken to prevent leaching of the toxins into the surrounding environment. Such special measures shall require the approval of the relevant provincial or national authority. The same shall apply for the disposal of solid waste generated from the various camp establishments.

Spoil sites shall be shaped to fit the natural topography. These sites shall be top soiled only if so required by the Project Specification. Slopes shall not exceed a vertical: horizontal ratio of 1:3. Only under exceptional circumstances will approval be given to exceed this ratio. Appropriate measures to minimise soil erosion shall be undertaken by the contractor. The engineer will only approve a completed spoil site at the end of the Defects Notification Period upon receipt from the contractor of a landowner's clearance certificate and an engineer's certificate certifying slope stability. The contractor's costs incurred in obtaining the necessary certification for opening and closing of spoil sites shall be deemed to be included in the tendered rate for spoiling.

COMMENTS	PICTURES
<p>It is important that the contractor start planning for the rehabilitation of the ground works.</p> <p>Attached is the rehabilitation checklist that shall be completed and signed by the various stakeholders.</p>	

(iii) Stockpiles

The contractor shall plan his activities so that materials excavated from borrow pits and cuttings in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling be necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the engineer for his approval, together with the contractor's proposed measures for prevention, containment and rehabilitation of environmental damage.

The areas chosen shall have a minimum of naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the contractor shall at all times ensure that they are:

- Positioned and sloped to create the least visual impact;
- Constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment; and
- Kept free from all alien/undesirable vegetation.

After the stockpiled material has been removed, the site shall be reinstated to its original condition. No material generated or deposited during construction shall remain on that site. Areas affected by stockpiling shall be landscaped, topsoiled, and maintained at the contractor's cost until clearance from the engineer has been given.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the engineer shall be subject to the same conditions as other stockpiled materials. Excess materials from windrows, in situ milling or any detritus of material from road construction activities may not be swept off the road and left unless the contractor is so instructed.

COMMENTS	PICTURES
Compliant to the EMP.	

(iv) Blasting activities

Clause 1222 of the Standard Specification of the Roads Authority of Namibia shall apply. The contractor shall also indicate to the engineer the manner in which he intends to advertise to the adjacent communities and road users the times and delays to be expected for each individual blast.

In addition, the contractor shall be responsible for any costs that can be attributed to blasting activities, including the collection of fly-rock from adjacent lands and fields.


COMMENTS	PICTURES
Blasting is taking place on site and is done in accordance with the ESMP requirements.	

(g) Batching sites


Should the use of an asphalt plant be considered on site, the contractor shall be responsible to obtain the necessary permit from the relevant authority.

Crushing plants and concrete batching plants, whether sited inside or outside defined quarry or borrow pit areas, shall be subject to the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relevant authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be the same as for those under clause C1008(h)(iii), with the exception that the contractor shall provide additional measures to prevent, contain and rehabilitate environmental damage from toxic or hazardous substances. In this regard the contractor shall provide plans that take into account such additional measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement ponds.

Effluent from concrete batch plants and crusher plants shall be treated in a suitable designated sedimentation pond to the legally required standards to prevent surface and groundwater pollution. The design of such a facility shall be submitted to the engineer for approval.

COMMENTS	PICTURES
Compliant to the ESMP.	

(h) Traffic accommodation

COMMENTS	PICTURES
Compliant to the ESMP.	

1.2 Conclusion

The contractor must be complimented with the efforts regarding ESMP implementation. The site well managed with a small number of non-compliant issues noted during the site visit.

The contractor is requested to keep up the good work and ensure that the site complies to the ESMP requirements on a permanent basis.

BORROW PIT TAKING-OVER CERTIFICATE

Date: _____

Borrow Pit Name and Number: _____

Location (road-km / GPS coordinates): _____

The above borrow pit shall only be handed over once all of the listed criteria have been met by the contractor.

Item No.	Description	Comments	Complies Yes / No
1.	The floor is level and no man made topographical high or low points are present in the borrow pit		
2.	The site in and around the pit is clear of any illegal dumping of foreign material, spoils and construction waste		
3.	Gradients of the pit slopes are less than 18 degrees (1:3) and are finished perpendicular to the slopes to prevent water erosion		
4.	The slopes are covered with overburden/ top soil, if available, with a thickness of not more than 300 mm		
5.	Available dead vegetation is placed on the slopes of the borrow pits		
6.	The berm of excess soil outside the pit is not higher than 1.0 m, sloped 1:3 and min. 3.0 m away from the edge of the pit and min. 9.0 m away from any structure		
7.	There are no walls or steps present in or around the borrow pit, if so, then the pit has been fenced off according to spec.		
8.	All alien vegetation has been removed from the floor, the slopes and berms of the pit		

Landowner:

(Name) (Signature)

Environmentalist:

(Name) (Signature)

Client:

(Name) (Signature)
