

# **Revised Environmental Management Plan for the Tantalite Valley Mine Project on ML 77 – Phase 1 including Upgrading of Existing Ore Processing Facility and Reworking of Waste Rock Dumps and mining and processing of Lithium Resources**

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## Document Status

<b>Proponent</b>	African Tantalum (Pty) Ltd
<b>Title of the proposed Activity</b>	Revised Environmental Management Plan for the proposed Tantalite Valley Mine Project on ML 77 – Phase 1 including Upgrading of Existing Ore Processing Facility and Reworking of Waste Rock Dumps and mining and processing of Lithium Resources for Namibia Tantalite Mine a subsidiary of African Tantalum (Pty) Ltd.
<b>Activity Type</b>	Upgrading of Existing Ore Processing Facility and Reworking of Waste Rock Dumps and mining and processing of Lithium Resources
<b>Location of the Activity</b>	Namibia Tantalite Mine a subsidiary of African Tantalum (Pty) Ltd. Warmbad area GPS Coordinates at the Mine: 28°43'14.90" S 18°45'10.59" E
<b>Competent Authority</b>	Environmental Commission (Ministry of Environment and Tourism)
<b>Consultant</b>	KPM Environmental Consulting Tel. +264 85 747 2222 E-mail: <a href="mailto:info@kpmenvironmental.com">info@kpmenvironmental.com</a>

## **PURPOSE OF THIS DOCUMENT**

This document, Revised Environmental Management Plan (EMP) for the proposed upgrading of an existing Ore Processing Facility and Reworking of Waste Rock Dumps has been revised to add mining and processing of Lithium Resources at Namibia Tantalite Mine. The initial assessment was carried out by Urban Green Consultants CC in 2016. The Environmental Clearance Certificate was issued in October 2016 and its validity ended on 31 October 2019. The ECC was renewed in April 2022 (ECC-00597) which is valid until April 2023. The proponent would like to apply to the Mining Commissioner at the Ministry of Mines and Energy to amend Mining License (ML-77) to add mining and processing of Lithium Resources on the mineral groups – Industrial Minerals as well as Dimension Stones.

It should be noted that, due to water shortage in the Warmbad area and especially at Farm Umeis where the Mine is located, the proponent could not complete the required upgrading of the Ore Processing Facility and the Reworking of Waste Rock Dumps which were all aimed for Phase 1. This document, therefore covers the aspects which were proposed in the initial assessment and the revised measures should be read together with the initial EMP.

The next phase (Phase 2) would include the actual mining activity, which were not covered in the initial certificate and thus mitigation measures from mining of Tantalite Ore have been added.

## **ACRONYMS AND ABBREVIATIONS**

BID	Background Information Document
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&AP	Interested and Affected Party
KPM	KPM Environmental Consulting
MET	Ministry of Environment and Tourism
ML	Mining License
NGO	Non-Governmental Organization
NTI	Namibia Tantalite Mine

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## Background

### 1. Introduction

African Tantalum (Pty) Ltd intends to mine Tantalite Ore at its Namibia Tantalite Mine at 110 Umeis Farm in the Warmbad area. The proponent is currently busy with Phase 1 of the proposed Tantalite Valley Mine which includes the upgrading of the existing Ore Processing Facility and Reworking of Waste Rock Dumps. Due to the low availability of water needed for mining purposes, the proponent could not make much-needed progress in the two mentioned activities. However, this has since improved since the renewal of the ECC in April 2022.

The two proposed activities which are essential for mining purposes cannot be undertaken without an Environmental Clearance Certificate, and they should have been conducted during and within the period covered by the ECC. Therefore, African Tantalum (Pty) Ltd has contracted KPM Environmental Consulting to amend the issued ECC to include the mining and processing of Lithium Resources and Dimension Stones. African Tantalum (Pty) Ltd has a substantial tonnage of Lithium resources that they intend to mine and process and hence the need to add on additional mineral groups – Industrial Minerals as well as Dimension.

### 2. The Environmental Assessment Practitioner

KPM Environmental Consulting is a Namibian company based in Windhoek with broadly skilled and educated researchers, social scientists, and mapping and environmental specialists. Annexure F contains KPM Environmental Consulting's company profile and registration documentation.

The team consists of project management skills, a range of technical skills and experience, and qualified environmental assessment practitioners.

KPM Environmental Consulting consultancy team as the EAP designated:

- a. Have knowledge of and experience in conducting assessments, including knowledge of the Environmental Management Act, the Environmental Impact

Assessment Regulations and guidelines that have relevance to this proposed activity;

- b. Have performed the work relating to the renewal of this ECC application in an objective manner, even if this results in view and findings that are not favorable to the applicant;
- c. Have complied with the Environmental Management Act, the Environmental Impact Assessment Regulations, guidelines and other applicable laws, and
- d. Have disclosed to the proponent, competent authority and the Environmental Commissioner all material information in its possession that reasonably has or may have the potential of influencing –
  - i. Any decision to be taken with respect to the application in terms of the Environmental Management
  - ii. Act, the Environmental Impact Assessment Regulations; or the objectivity of any report, plan or document prepared by the EAP in terms of the Act and its regulations.

### 3. Purpose and Scope of the revised EMP

The aim of this EMP is to ensure that all issues raised in the initial assessment in relation to the upgrading of the existing Ore Processing Facility and the Reworking of Waste Rock Dumps and any other new activity that may be needed are covered and that mitigation measures are proposed and incorporated into the Environmental Management System (EMS). The ultimate aim is to minimize the number of residual negative impacts of HIGH significance during the implementation of Phase 1.



#### 4. Summary of the Proposed Activities

The first activity will be the upgrading of an existing Ore Processing Facility where Tantalite Ore will be processed before storing and transporting it to its clients. This facility will be an important asset for the Mine but also for the country, as this would ensure that value addition (processing Tantalite Ore) is done locally before Ore is shipped out of the country.

The second activity will be the reworking of existing Waste Rock Dumps for the Mine. The Waste Rock Dump is an essential site for mining operations. The management of mine waste dumps has initially been assigned mainly to the on-site mining operations. However, more recently, the focus has changed to include more scientific and technological-driven methods of waste rock dump management and auditing of those dumps.

The reviews are done to assess the compliance of the proponent with the initial EMP for the two activities and did not identify any serious threat that the proposed activities might have on the natural and socio-economic environment. Further, potential impacts associated with the proposed activities have been identified and added to this EMP. Impacts on the air pollution were identified as significant for the proposed Ore Processing Facility. The additional impacts identified in the revised EMP can be mitigated through effective implementation of the Environmental Management Plan and are therefore not expected to have any detrimental negative impacts on the surrounding communities.

The other impacts identified in this study can be addressed through the implementation of the Environmental Management Plan and are therefore not expected to have any detrimental negative impacts on the surrounding farming communities. Mitigation measures are described in greater detail in the EMP. Hence, the activity, as proposed in this report, can be undertaken with no significant impacts if executed according to the EMP.

It is therefore concluded that the two proposed activities can be undertaken without posing any serious health effects to the surrounding communities and habitats. It is

considered that the benefits of upgrading the existing Ore Processing Ore and the Reworking on the Waste Rock Dumps far outweigh the minor health risks that can be avoided through EMP implementation. It is recommended that the revised EMP should be implemented fully in order to ensure that all potential environmental and social impacts are satisfactorily addressed.

# REVISED ENVIRONMENTAL MANAGEMENT PLAN

## 1. Introduction to the EMP

The EMP is a set of feasible and cost-effective mitigation, monitoring and institutional measures to avoid adverse environmental and social impacts, reduce them to acceptable levels or to compensate for them. This EMP covers all adverse environmental impacts, including any that may result from the upgrading of the existing Ore Processing Facility and also for Reworking on the Waste Rock Dumps for the Namibia Tantalite Mine. The EMP will provide the technical details for each mitigation, monitoring and institutional measure, including the impact(s) to which it relates and the conditions when it is required, together with designs, equipment descriptions and operating procedures. Where necessary, the EMP will specify for each mitigation measure timing, cost, locations, and institution responsible.

The EMP will specify the monitoring objectives and the types of monitoring needed to ensure that the mitigation measures have been put in place and are working as intended for plus any other monitoring of the environmental and social aspects that is considered appropriate to measure the environmental impacts or to ensure that unanticipated environmental impacts do not occur. The EMP will also specify the monitoring and reporting procedures to ensure early detection of issues and provide information on progress and results of mitigation. This EMP describes the processes that African Tantalum and associates will follow to maximize compliance and minimize harm to the environment. This plan will also help the Mine map out progress toward achieving continual improvements. The EMP comprises of a list of actions needed to mitigate the potential negative environmental impacts identified in the initial EIA.

The development of an Environmental Management Plan is a requirement for any EIA project as per Namibia's Environmental Management Act No.7 of 2007. Therefore, this revised EMP is a legal document that must accompany the Compliance Report before the renewal of an Environmental Clearance Certificate.

## 2. Objectives of the EMP

The main purpose of this EMP is to prevent avoidable damage and/or minimize or mitigate unavoidable environmental damage associated with Tantalite Ore but more specifically on the upgrading of the Ore Processing Facility and also the Waste Dump Site which will be improved.

The EMP forms part of the two proposed activities that all contractors/ employees/ drivers of the Mine must be committed to.

This EMP:

- identifies all activities related to the upgrading of the Ore Processing Facility and for Reworking on the Waste Rock Dumps that could cause environmental damage (risks) and provides a summary of actions required;
- identifies institutions responsible for ensuring compliance with the EMP and provides their contact information;
- provides standard procedures to avoid, minimize and mitigate the identified negative environmental impacts and to enhance the positive impact of the proposed activities on the environment;
- forms a written record of procedures, responsibilities, requirements and rules for contractor/s, their staff and any other person who must comply with the EMP;
- provides a monitoring and auditing programme to track and record compliance and identify and respond to any potential or actual negative environmental impacts, and
- provides a monitoring programme to record any mitigation measures that are implemented.

## 3. EMP Administration

For the general provisions of this EMP to be fully implemented there is a strong need to clearly outline the roles and responsibilities of all stakeholders. There is also a need for African Tantalum and its contractors to appoint an overall responsible person to ensure the successful implementation of the EMP. The responsible person needs to be someone who has a basic understanding of EMP administration. Under the

management actions, each action is allocated to a responsible entity to ensure that the specific action is managed and documented properly.

Furthermore, all key role players such as contractors who will be involved during the upgrading of the existing Ore Processing Facility and also those who will be reworking on the Waste Rock Dump must be informed about the contents of this EMP and activities to be undertaken to mitigate the potential impacts identified.

Any new developments that will occur during the upgrading of the existing Ore Processing Facility and reworking on the Waste Rock Dump that might have potential impacts on the environment should trigger further adjustments and revision of this EMP to ensure that all potential threats to the environment are addressed on an ongoing basis.

## 4. Management Actions

### 4.1. Generic Management Action

In many instances, many activities that have been conducted or implemented as existing features do not require an Environmental Impact Assessment and hence is not generally guided by an EMP. However, in order to ensure that such activities are effectively maintained and that mining activities are done in a responsible fashion and that they do not pose any risks to the environment or human health and wellbeing, it is recommended that the following general management actions be included in this EMP.

### 4.2. Record Keeping

Record keeping is an essential part of effective management. African Tantalum should establish an effective monitoring and record keeping system for the duration Phase 1. The purpose of this is to ensure that effective management and control of all activities during transportation are carried out in a responsible manner as required by the law in order to ensure that no impacts are triggered as a result of the proposed activities.

The following is a brief guide to the type of records that should be kept.

- **Plans and Procedures:** There should be a complete record of steps and procedures clearly indicating what should be done, the responsible person and the activity that should be done as precautionary measure. Such plans should be kept up to date by marking up all changes, i.e. omissions and additions to the procedures.

- **Storage:** Records should be done on how many bags or consignment are stored at the warehouse and the conditions of the consignment whether bags are intact or whether they are leaking. If leakage is detected, measures should be taken to ensure that the situation is rectified.

- **Daily log:** A large, page-a-day diary will serve for this purpose and any information which does not logically fit in some other record must be entered in the diary. Typical examples are weather conditions, temperature, peculiar circumstances and problems encountered.

- **Environmental, public health and safety education:** Set up an Educational Programme that is led by an Environmental Educator for staff involved in the upgrading of the Ore Processing Facility and also at the Waste Rock Dump. The programme should discuss with staff and drivers the role that they can and need to play regarding safe working on site.

## 5. Specific Management Actions

The table below summarizes the mitigation measures to be undertaken to minimize the overall environmental impacts identifies for these two activities.

## MANAGEMENT AND MITIGATION ACTIONS

No.	Impact	Recommended mitigation	Technical Information	Implementation Schedule	Costing in N\$	Responsible Agent
<b>Aquatic Environment</b>						
<b>Impacts during the upgrading of the existing Ore Processing Facility</b>						
1.	Loss of vegetation as some trees/plans might be cut down to allow for expansion of the Ore Processing Facility	Ensure that trees/plants cut down are replaced with similar plant species where possible.	The Tree Atlas of Namibia might be useful in identification of the plants.	Mitigation measures applicable during the expansion of the facility.	No additional mitigation cost predicted.	African Tantalum (Pty Ltd/Contractor
2.	Tantalite Ore particles that spill into the air during the upgrading of the facility may pose health hazard/air pollution.	- Dust suppression methods should be employed to control air pollution.	No technical information required.	Mitigation measures applicable during the offloading of bags.	No additional mitigation cost predicted.	African Tantalum (Pty Ltd/Contractor

3.	Tantalite Ore can cause minor irritation, tearing and mild temporary pain.	- Flush with warm running water for at least 15 minutes, including the eyelids to remove dust particle(s). If irritation persists seek medical attention.	If irritation persists seek medical attention.	Mitigation measures applicable during the offloading of bags especially when it is dusty.	No additional mitigation cost predicted.	Contractor
4.	Tantalite Ore may cause minor irritation or uncomfort to the skin.	Remove contaminated clothing and wash affected area with soap and warm water. Seek medical attention if irritation develops or persists.	Seek medical attention if irritation develops or persists.	During construction stage.	No additional mitigation cost predicted.	Contractor
5.	Tantalite Ore has very low solubility in water and generally has no direct bio-availability.	Waste Tantalite Ore should be handled and disposed of in a manner which complies with local, state/provincial and federal regulations. Tantalite Ore may cause adverse long-term effects in the aquatic environment. Keep out of sewers, ditches or drains. Ensure that no spillage during processing.	Keep Ore out of sewers, ditches or drains.	During loading / offloading of the Ore.	No additional mitigation cost predicted.	Contractor



6.	Tantalite Ore fumes may be released in a fire.	Fire fighters must be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full-face piece mask.	Firefighting equipment should be handy staff handling Ore training on how to respond should fire incident occur	During upgrading of the Tantalite Ore Processing Facility.	No additional mitigation cost predicted.	African Tantalum (Pty) L td/Contractor
7.	Tantalite Ore spillage on sea and on land may cause health hazards to living organisms.	Small Spill - sweep up material for disposal or recovery. Large spills - Shovel material into containers. Thoroughly sweep area of spill to clean up any residual material. In case of large spills, follow the facility emergency response procedures.  Provisions should also be made to clean up any Tantalite Ore particles that may spill on land.	Tools and equipment should be handy to correct any spillage incident.	During upgrading of the Tantalite Ore Processing Facility.	No additional mitigation cost predicted.	African Tantalum (Pty) Ltd/Contractor
<b>Impacts from reworking on Waste Rock Dump</b>						
8.	Huge volumes of waste rock dumps generated during the mining of the Tantalite Ore.	Ensure that the existing waste rock dumps is reworked on in a way that it can accommodate more waste rocks generated.	Waste Rock should be managed in a systematic way that is easy to sort and dispose of.	During dumping and sorting of waste rock.	No additional mitigation cost predicted.	African Tantalum (Pty) Ltd

9.	Large amount of mining waste can have major environmental impacts and require appropriate management strategies both in the short- and long-term	Waste Rock should be sorted according to the rock type and size to enable easy correction should someone want to re-use them.				
10.	Containers / bags with leakages may cause contamination of natural environment (water bodies, land etc.)	In case of small spill - sweep up material for disposal or recovery. In case of large spills – shovel spills into container. Thoroughly sweep area of spill to clean up any residual material. In case of large spills, follow the facility emergency response procedures.  Isolate the spill area to prevent people from entering it until the clean-up is complete.	All personnel handling or operating the transportation trucks should be trained on how to handle any leakages.	During offloading and transportation	No additional mitigation cost predicted	Contractor / Truck Operator
9.	In the event of spills truck operator may experience some eyes, skin or respiratory problems	Bus Operator should be provided with adequate personal protective equipment and in the event of spill or accident, Truck Operator should wear safety glasses or goggles, impervious gloves, boots and overalls to avoid skin contacts.	Truck Operator should be inducted on health and safety at least once a month	During the transportation period	No additional mitigation cost predicted	Contractor / Truck Operator
9.	Tantalite Ore particles may be blown away in case if bags are torn or container not properly sealed (dust spillages)	Ensure that all bags or containers are sealed properly before the driver take off.	Consignment should be inspected before departure	During the transportation period	No additional mitigation cost predicted	Contractors/ Truck Operator

10.	Open trucks can cause spillages on quay and neighboring operations	Measure should be taken to contain dust or spillage that may come from open trucks.	Consignment should be inspected before departure	During the transportation period	No additional mitigation cost predicted	Contractors/ Truck Operator
11.	Traffic congestions to and from the mine (in Karasburg, Warmbad, Keetmanshoop and along the B1, B4 and C13 road)	Truck Operators and drivers should be inducted to take respect road signs and to observe road patrols or pedestrian crossing especially around schools.	Truck Operators and Drivers should be inducted on areas where they need to give right of way to school children and pedestrian crossings.	During the transportation period	No additional mitigation cost predicted	Contractors/ Truck Operator
12.	Spillages caused by cargo trapped between trucks tires.	The facility should be maintained at all times.	No technical information required.	Mitigation measures applicable during the operational phase of the project.	No additional mitigation cost predicted.	Contractors.

## 6. Monitoring and Evaluation

### 6.1. Monitoring

This section of the EMP is aimed at providing the monitoring and reporting procedures to ensure early detection of issues and provide information on progress and results of mitigation.

The main objective of this EMP's monitoring program is to ensure that the mitigation measures that have been put in place are working as intended to ensure that unanticipated environmental impacts do not occur. The effectiveness of the mitigation measures should also be evaluated and adjusted accordingly.

The person to be appointed by Namibia Tantalite Mine to take the overall responsibility of ensuring that the EMP is fully implemented must also monitor the implementation of the EMP and keep records throughout the duration of the activity.

Reporting procedures for conveying information from the monitoring activities must be developed by the Namibia Tantalite Mine Management in order to ensure that management is able to take rapid corrective action should certain thresholds be exceeded; this could be included as part of compliance management.

### 6.2. Performance Assessment of the EMP during Operational Phase

Performance Assessment (P.A) is a process to evaluate compliance with stipulated EMP requirements and to assess the achievement of defined objectives and targets. The timing of the P.A. should be conducted once every year by an independent environmental consultancy company.

A P.A. analyses the results obtained from monitoring, assesses whether objectives and targets have been met and whether there are variances from the stipulated EMP and legal requirements. In addition, the P.A. also assesses whether EMP implementation has been undertaken according to Programmed arrangements and that the EMP itself is being appropriately updated. The P.A. should confirm that the identified corrective action has been undertaken and then assess the effectiveness of that action.

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