



Excel Dynamic Solutions

Draft Environmental Management Plan (EMP)

Environmental Scoping Assessment (ESA) For the Upscaling of Mining Claims (MCs) No. 71309 – 71312 located North-west of Usakos in the Erongo Region, Namibia

Reference Number: APP- 002703

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Figure 1: Location of the MCs located North-west of Usakos, in the Erongo Region 1

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1 INTRODUCTION

1.1 Project Background

Liina likwambi & Etemo Mining CC (hereinafter referred to as *The Proponent*) is the holder of the Mining Claims (MCs) No. 71309 - 71312, located on farm Goabeb No. 66 near Usakos in the Erongo Region. The Proponent received an environmental clearance certificate (ECC) for semi-mechanical and manual methods of mining semi-precious stones, from the Department of Environmental Affairs and Forestry (DEAF) in May 2019, and obtained approval for tenure on the MCs between 24 February, 2020 and 23 February, 2023, granted by the Ministry of Mines and Energy (MME). The Proponent

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~~received an environmental clearance certificate (ECC) for semi-mechanical and manual methods of mining from the department of environmental affairs (DEA) in May 2019. However, The Proponent now intends to upscale the mining methods ~~de a transitional~~ from manual and semi-mechanical to mechanical methods of mining for semi-precious stones on the MCs to conduct mining activities upon approval, in order to improve efficiency of operations. The Proponent focuses on acquisition, and development of targeted commodity (i.e. Semi-Precious stones). The locality map of the MCs site is shown in Figure 1. The tenure of these MCs are from 24 February, 2020 to 23 February, 2023.~~

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In terms of Section 27 (1) of the Environmental Management Act (EMA), no. 7 of 2007 and in line with Sections 32-37 of the EMA Regulations as gazetted in 2012, the proposed prospecting and mining activities on the MCs form part of the listed activities that may not be conducted without an EIA being undertaken and an ECC obtained. The relevant listed activities as per EIA regulations are:

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- 3.1 The construction of facilities for any process or activities which requires a license, right of other forms of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act, 1992).
- 3.2 other forms of mining or extraction of any natural resources whether regulated by law or not.
- 3.3 Resource extraction, manipulation, conservation and related activities.

This ~~statutory~~ document has been prepared as per requirement in accordance with Section 8 of the EMA (No. 7 of 2007) and its 2012 EIA regulations. The compilation of this EMP is one of the output requirements (scope of work) presented to the Environmental Consultant (Environmental

Assessment Practitioner (EAP)~~Excel Dynamic Solutions (Pty) Ltd~~ by The Proponent. It is required of the Environmental Consultant to comply with the EMA and provide for the following:

- Prepare a detailed ~~n explicit~~ Environmental Management Plan to be used as a guideline to monitor compliance to the recommendations stipulated in the EIA and to assist in managing and monitoring activities throughout the operation and maintenance of the proposed mining activities on the MCs.
- The Environmental Consultant must clearly elucidate in the EMP, the roles and responsibilities of the Proponent, the contractors and any other identified stakeholders.

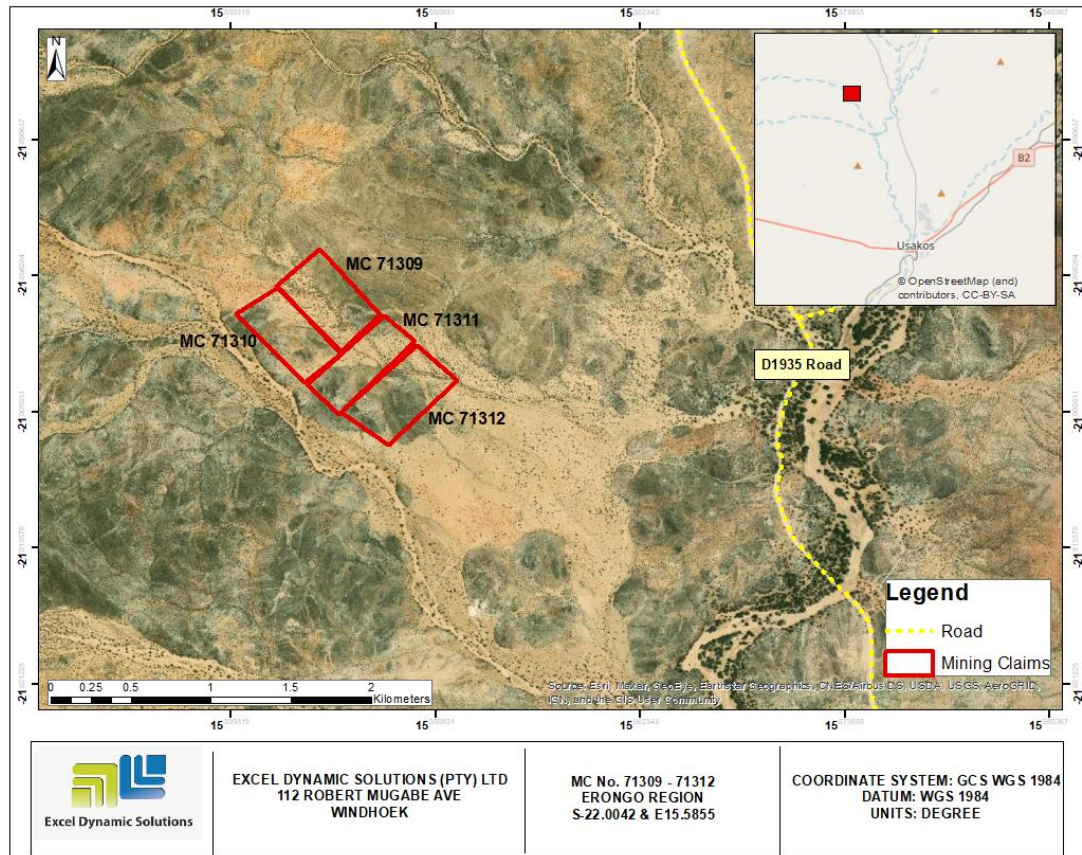


Figure 1: **Locality map** of the MCs **71309 - 71312** located North-west of Usakos, in the Erongo Region.

1.2 Aim of the Draft Environmental Management (EMP)

Regulation 8(j) of the EIA Regulations (2012) requires that a draft Environmental Management Plan (EMP) shall be included as part of the Environmental Assessment (EA) scoping report. A 'Management Plan' is defined as:

"...a plan that describes how activities that may have significant environmental effects on the environment are to be mitigated, controlled and monitored."

An EMP is one of the most important outputs of the EA process as it synthesizes all of the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. It provides a link between the impacts identified in the EA process and the required mitigation measures to be implemented during operation. It is important to note that an EMP is a statutory document and a person who contravenes the provisions of this EMP may face imprisonment and/or a fine. This EMP is a living document and can be amended to adapt to address project changes and/or environmental conditions and feedback from compliance monitoring.

The purpose of this document is, therefore, to guide environmental management throughout the different phases of the proposed mining activities, namely: operation and maintenance phase, and decommissioning phase:

- **Operation and Maintenance** - This is the phase where The Proponent ~~will do prospecting~~carries out and mining activities for the targeted commodity groups and undertake related activities on site. It is also the phase during which maintenance of the area, equipment and machinery is done by The Proponent.Carry out
- **Decommissioning and Rehabilitation** – This is the phase during which the mining activities on the MCs cease. The decommissioning of the MCs operations may be considered as a result of ~~the poor results or declining~~ in the focus commodity market price. Before the decommissioning phase, The Proponent will need to put site rehabilitation measures in place.

Environmental Monitoring Requirements: In order to support and ensure that the proposed mitigation measures are achieving the desired results, a monitoring plan must be implemented alongside the mitigation plan.

This draft EMP will be used by The Proponent, employees and/or contractors to provide management measures to be undertaken during mining activities, to address the environmental

impacts identified in the scoping report and ensure that the impacts on the environment are avoided, or limited if they cannot be avoided completely.

In order to fulfill the requirements of the EMA and its 2012 EA Regulations, The Proponent appointed Excel Dynamic Solutions (Pty) Ltd (EDS), an independent consulting company to conduct the required EA process on their (Proponent's) behalf. This draft EMP will be submitted as part of an application for the proposed ~~upgrade of mining methods on the MCs to mechanical mining methods~~, on the MCs to the Environmental Commissioner at the Department of Environmental Affairs (DEA), at Ministry of Environment, Forestry and Tourism (MEFT).

The EA project is headed by Mr. Nerson Tjelos, a qualified geoscientist and experienced Environmental Assessment Practitioner (EAP). The consultation process was done Nerson Tjelos and reporting by Mr. Silas David and reviewed by Ms. Fredrika Shagama.

1.4 Details of the Project Proponent

The details of the Proponent are presented in Table 1 below.

Table 1: Contact details of the Proponent, and purpose of the required ECC

<u>Full name of Proponent</u>	<u>Contact Details</u>	<u>Postal Address</u>	<u>ECC Application for:</u>
<u>Liina likwambi & Etemo Mining CC</u>	<u>Telephone: +264 81 208 0205</u> <u>Email: etemomining@gmail.com</u>	<u>P O Box 50774</u> <u>Windhoek</u> <u>Namibia</u>	<u>Upscaling and transition from manual and semi-mechanical mining methods to mechanical mining methods on Mining Claims (MCs) 71309 – 71312 located near Usakos in the Erongo Region, Namibia</u>

1.5 Environmental Assessment Legal Requirements

The content of the EMP must meet the requirements of Section 8 (j) of the EIA Regulations. The EMP must address the potential environmental impacts of the mining activities on the environment

throughout the project life-cycle. It must also include a system for assessment of the effectiveness of monitoring and management arrangements after project implementation.

The Proponent, therefore, has the responsibility to ensure that the mining activities as well as the EA process conform to the principles of the EMA and must ensure that employees act in accordance with such principles. **Table 2** below lists the requirements of an EMP as stipulated by Section 8 (e) of the EIA Regulations, primarily on specific approvals and permits that may be required for the activities required of the MCs.

Table 24: Applicable legal requirements and permits to the activities of the MCs

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs.	The EMA and its regulations should inform and guide this EA process. Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue.
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	Contact details at the Department of Environmental Affairs (DEA), Ministry of Environment and Tourism (MET) Contact person(s) at MET and their details: Mr. Damian Nchindo or Mr. Josafat Hiwana (Chief and Senior Conservation Scientists and EIA Report Reviewers/evaluators) Tel: +264 61 284 2717 / +264 61 284 2962

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
		Email: damian.nchindo@met.gov.na and josafat.hiwana@met.gov.na , respectively
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	Section 48 (3): In order to enable the Minister to consider any application referred to in section 47 the Minister may (b) require the person concerned by notice in writing to (i) carry out or cause to be carried out such environmental impact studies as may be specified in the notice. Section 54(2): details provisions pertaining to the decommissioning or abandonment of a mine	The Proponent should ensure that all necessary permits/authorization for these MCs are obtained from the Ministry of Mines and Energy (MME). Contact person and details at the MME (Mining Commissioner) Mr. Erasmus Shivolo Tel: +264 61 284 8167 Email: Erasmus.Shivolo@mme.gov.na
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that "No person shall possess [sic] or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"	The Proponent should obtain the necessary authorisation from the MME for the storage of fuel on-site. Carlo Mcleod (Ministry of Mines and Energy: Acting Director – Petroleum Affairs) Tel: +264 61 284 8291
Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.	Division of Labour Services at the Ministry of Labour, Industrial Relations and Employment Creation. Tel: +264 61 206 6111

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Forestry Act 12 of 2001, Amended Act 13 of 2005	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22 (1)). The Act prohibits the removal of and transport of various protected plant species.	<p>Should there be protected plant species, which are known to occur within the project site, these are required to be removed and a permit should be obtained from the nearest Forestry office (Ministry of Agriculture, Water & Forestry(MAWF)) prior to removing them.</p> <p>Contact Details at MAWF (Director of Forestry)</p> <p>Mr. Joseph Hailwa</p> <p>Tel: +264 61 208 7663</p> <p>Email: Joseph.Hailwa@mawf.gov.na</p>
National Heritage Act No. 76 of 1969	Call for the protection and conservation of heritage resources and artefacts.	<p>Should any archaeological material, e.g. bones, old weapons/equipment etc be found on the MCs site, work should stop immediately and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material.</p> <p>Contact Details at National Heritage Council of Namibia</p> <p>Mr. Salomon April or Dr. Alma Nankela</p> <p>Tel: +264 81 244 375</p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Road traffic and transport Act 52 of 1999 and its 2001 Regulations	Provides for the control of traffic on public road and the regulations pertaining to road transport, including the licensing of vehicles and drivers.	Eugene de Pauw (Roads Authority- specialist Road legislation) Tel: +264 61 284 7072

1.4.1.3 Appointed Environmental Assessment Practitioner

In order to fulfill the requirements of the EMA and its 2012 EA Regulations, The Proponent appointed Excel Dynamic Solutions (Pty) Ltd (EDS), an independent consulting company to conduct the required EA process on their (Proponent's) behalf. This draft EMP will be submitted as part of an application for the proposed upgrade of mining methods on the MCs to mechanical mining methods, ~~on the MCs~~ to the Environmental Commissioner at the Department of Environmental Affairs (DEA), at Ministry of Environment, Forestry and Tourism (MEFT).

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National Heritage Act No. 76 of 1969	Call for the protection and conservation of heritage resources and artefacts.	<p>Should any archaeological material, e.g. bones, old weapons/equipment etc be found on the MCs site, work should stop immediately and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material.</p> <p>Contact Details at National Heritage Council of Namibia</p> <p>Mr. Salomon April or Dr. Alma Nankela</p> <p>Tel: +264 81 244 375</p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
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1.6 Draft EMP Limitations

This EMP has been drafted with the acknowledgment of the following limitations:

- This EMP has been drafted based on the Environmental Assessment (EA) conducted for targeted prospecting and mining activities of Semi-Precious Stones on the MCs located northwest of Usakos in Erongo.
- The mitigation measures recommended in this EMP document are based on the risks/impacts in the EA Report which were identified based on the project description as provided by the Proponent, site investigation and public input. Should the scope of the proposed project change, the risks/impacts will have to be reassessed and mitigation measures provided accordingly.

2 EMP ROLES AND RESPONSIBILITIES

The Proponent is ultimately responsible for the implementation of the EMP. ~~I~~However, the Proponent may, alternatively, delegate this responsibility at any time, as they deem necessary during the project phases. The roles and responsibilities of all delegates/parties involved in the effective implementation of this EMP are set out below:

Competent Monitoring Authority (Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs (DEA)): Responsible for enforcing compliance with the EMA, its regulations and full implementation of this EMP.

Proponent's Representative (PR): If the Proponent does not ~~personally~~ manage all aspects and phases' activities referred to in this EMP, they should assign this responsibility to a suitably qualified individual referred to in this plan as the Proponent's Representative (PR). The PR may be appointed to manage all phases of the mining project, or to manage only the EMP aspects for the project. The PR's responsibilities may include:

- Managing the implementation of this EMP and updating and maintaining it when necessary.
- Management and monitoring of individuals and/ or equipment on-site in terms of compliance with this EMP.
- Issuing fines for contravening EMP provisions.

Site/Project Manager (as appropriate): This individual(s) will be responsible to ensure that the mining activities of the project are completed on time. The manager's duties and responsibilities will include:

- Ensure that relevant commitments contained in the EMP Action Plans are adhered to.
- Ensure relevant staff is trained in procedures entailed in their duties.
- Maintain records of all relevant environmental documentation for the project.
- Reviewing the EMP annually and amending the document when necessary.
- Issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site.
- Cooperate with all relevant interested and affected parties/stakeholders.
- Development and management of schedules for daily activities.

Environmental, Health & Safety (EHS) Officer or Environmental Control Officer (ECO):

The Proponent may assign the responsibility of ensuring EMP compliance throughout the project life cycle to a designated member of staff or external qualified and experienced person, referred to in this EMP as the Environmental Control Officer (ECO) or Safety, Health & Environment, (SHE) Officer. The ECO/SHE will have the following responsibilities:

- Management and facilitation of communication between the Proponent, PR and Interested and Affected Parties (I&APs) with regard to this EMP.
- Conducting site inspections (recommended frequency is monthly during the operation phase and bi-annually for the operation and maintenance) of all areas with respect to the implementation of this EMP (monitor and audit the implementation of the EMP).
- Advising the PR on the removal of person(s) and/or equipment not complying with the provisions of this EMP.
- Making recommendations to the PR with respect to the issuing of fines for contraventions of the EMP.
- Undertaking an annual review of the EMP and recommending additions and/or changes to this document.

- Ensuring that the operational activities on site operate according to the International System organization (ISO) standard 14001: 2015.

Archaeology: Chance Finds Procedure (CFP) Implementation Roles

The following personnel have been assigned responsibilities as per the Chance Finds procedure (Appendix 1):

- **Operator:** To exercise due caution if archaeology remains are found.
- **Foreman:** To ensure site and advise management timeously.
- **Superintendent:** To determine safe working boundary and request inspection.
- **Archaeologist:** To inspect, identify, advise management, and recover remains.

The Proponent should assess these commitments in detail and should acknowledge their obligation to the specific management actions detailed in the Tables under the following sections.

2.1 Management of Key Potential Environmental Impacts to be managed

From the assessment conducted, the following key potential negative impacts have been identified per project phase and are summarized in **Table 3** below.

Table 32: Summary of key potential environmental impacts per project phase

	Project Phase	Potential negative impacts identified in the EA
1	Operation and maintenance	Biodiversity loss, dust generation, Occupational Health and safety risks, Scars to landscape, Waste generation, Noise.
2	Decommissioning	Loss of employment by workers at the mining site and contribution to the national economy.

2.2 Aim of the Environmental Management Plan Actions

The aim of the management actions of the EMP is to avoid potential negative impacts where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts.

Management actions recommended for the potential impacts rated in the EIA carried out for the mining activities were based on the three project phases listed below:

- Operation Phase (**Table 4**)
- Monitoring (**Table 5**)
- Decommissioning and Rehabilitation

The responsible person(s) should assess these actions in detail and acknowledge their commitment to the specific management actions detailed in the phases given under the following subsections.

2.3 Operation Phase Management Action Plans (Mitigation Plan)

The management action plans recommended for this phase are presented in **Table 3** below.

Table 43: Management action plans for the Operation and Maintenance Phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
PLANNING PHASE						
EMP implementation and training	Lack of EMP awareness and implications thereof	<p>A Comprehensive Health and Safety Plan for the project activities should be compiled. This will include all the necessary health, safety, and environmental considerations applicable to respective works on sites.</p> <p>An EMP non-compliance penalty system should be implemented on site.</p> <p>The Proponent should appoint an EHS Officer to be responsible for managing the EMP implementation and monitoring.</p>	All required Plans and systems are compiled and in place. and Environmental, Health & Safety (EHS) Officer or Environmental Control Officer (ECO) is appointed	Proponent	EMP implementation Plans and Systems	Pre-mining works
Authorizations	Lack of Agreements, Permits/ Licenses	<p>All the required agreements and licenses or permits should be applied for and signed, respectively before commencement of work on the MCs, or as required.</p> <p>The permits, agreements referred to herein include land access & use (by the custodian of the land (by MEFT's Parks Division), waste management disposal permits from</p>	<p>Applicable permits and licenses to be obtained from relevant authorities and kept on site for records keeping and future inspections.</p> <p>Agreements/permits signed and obtained from on time, min. 2</p>	Proponent	Proponent Respective authorities and services provider(s)	Prior to mining works

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		the relevant facility operator/owner, water supply agreement and should there be fuel handling on site, petroleum storage permits from Ministry of Mines and Energy (MME), etc.	months prior to planned commencement date of works.			
Communication between the Proponent and other neighbouring land users and custodians	Lack of communication (proper liaison) between other land users and Proponent with regards to land use	The Proponent should appoint a Public Relation Officer (PRO) to liaise with the land users and or custodians. A clear communication procedure/plan which should include a grievance mechanism should be compiled.	A PRO is appointed Ongoing Stakeholders' and Public Engagement & Consultation throughout the project cycles, when and as required. PRO contact details to be provided to the affected land users and custodian	Proponent	PRO Complaint's logbook	PRO appointment (Prior to project activities) and their responsibilities throughout the project activities
Employment	Creation of employment opportunities	Non-skilled labour should be sourced from the locally affected area (people from the local communities), in accordance with procedures approved by the relevant authorities. Equal opportunities should be provided for both men and women.	Number of locals employed for mining activities	Proponent in collaboration with the Site/Project Manager (if necessary)	Record of employees	Pre-project activities and when necessary, throughout

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
Specialised procurement of services	Mining contractors and services	All services related to small-scale mining activities such as trenching and pitting that the Proponent may need, preference should be given to local providers of such services. If not available locally, the services search should be extended to a regional level (Erongo Region) and lastly, nationally.	Number of hired contractors	Proponent Site/Project Manager	Record of hired or contracted companies or services providers	Pre-project activities and when necessary, throughout
PROSPECTING AND OPERATIONAL PHASE						
EMP implementation and training	Lack of EMP awareness and implications thereof	EMP trainings should be provided to all new workers on site. All site personnel should be aware of necessary health, safety, and environmental considerations applicable to their respective work. The implementation of this EMP should be monitored. An EMP non-compliance penalty system should be implemented on site.	Compliance monitoring conducted monthly for the operational phase and should be recorded.	EHS Officer	Bi-annual reports Records of EMP training conducted.	Throughout the operational phase and as required

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
Communication between the Proponent and other neighbouring land users and custodians	Lack of communication (proper liaison) between other land users and Proponent with regards to land use	<p>The PRO should be introduced to the neighbouring land users or the representative and his or her contact details provided to them prior to undertaking activities for easy communication during the small-scale mining activities.</p> <p>The Proponent should compile a clear communication procedure/plan which should include a grievance and response mechanism.</p>	<p>PRO is part of the project personnel.</p> <p>Ongoing Stakeholders' and Public Engagement & Consultation throughout the project cycles, when and as required</p>	PRO	<p>Complaint's logbook</p> <p>PRO contact details to be provided to the affected land users.</p> <p>Records of Stakeholders' and Public Consultations</p>	Throughout the project activities
Water Resources Use	Over-abstraction (water demand and availability)	<p>Abstraction of water from local aquifers should be avoided at all costs by ensuring that part of the required water is sourced from the Usakos Town Council water supply line (through agreed purchase) and or augmented by carted water from areas with better supply.</p> <p>The Proponent should prioritize carting water from outside the project area and reach an agreement with the Usakos Town Council to supply water for drinking (to augment the project water needs).</p> <p>Although water will not be abstracted from the local aquifers,</p>	<p>Water supply agreements</p> <p>Proof/ recording/ quantification of water saving efforts.</p>	<p>Proponent</p> <p>Site/Project Manager</p>	<p>Water supplier</p> <p>Proponent</p> <p>Water storage tanks on site</p>	<p>Once off supply agreement</p> <p>Throughout the Operational phase</p>

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>the water user (Proponent) should be water-use conscious and consider voluntary water use reduction by sticking to their proposed threshold volumes or less when more water is not really required.</p> <p>The Proponent should aim to use water efficiently, recycle and re-use where necessary and possible.</p> <p>Water reuse/recycling methods should be implemented as far as practicable for small scale-mining activities. The water used to cool off operational equipment should be captured and used for the cleaning of project equipment, if possible.</p> <p>Water conservation awareness and saving measures training should be provided to all the project workers in both phases so that they understand the importance of conserving water and become accountable.</p>				
Soils	Physical soil/land disturbance and loss of topsoil	Overburden should be handled more efficiently during operations to avoid erosion when subjected erosional processes.	<p>No proliferation of informal vehicle tracks.</p> <p>No new erosion gullies.</p>	EHS Officer/ECO	<p>Proponent</p> <p>All personnel</p> <p>Complaints logbook</p>	Throughout the Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>Stockpiled topsoil materials should be used to backfill the excavated and disturbed site areas/spots.</p> <p>Soils that are not within the intended and targeted footprints of the site should be left undisturbed and soil conservation implemented as far as possible.</p> <p>Project vehicles and machinery should stick to access roads provide and or meant for the project operations but not to unnecessarily create further tracks on site by driving everywhere resulting in soil compaction.</p> <p>The disturbance of the soil surface in the vicinity of the working sites must be minimised to prevent wind erosion. The footprint of the MCs site area must be kept small as much as possible and existing access road are to be always utilised to avoid off road tracks.</p> <p>The project footprint area should not be cleared entirely, and the operational vehicles and equipment must be placed in such a way that soil disturbance is minimised, and the site should be rehabilitated after each onsite work.</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		Utilize the existing road trucks as far as possible to minimize the creation of unnecessary and long-term footprints on the already sensitive desert soils				
Soils and water resources	Soils and water resources pollution	<p>Oil and wastewater spill control preventive measures should be in place on site to management soil contamination, thus preventing and or minimizing the contamination from reaching water resources bodies. Some of the soil control preventive measures that can be implemented include:</p> <ul style="list-style-type: none"> -Identification of oil storage and use locations on site and allocate drip trays and polluted soil removal tools suitable for that specific surface (soil or hard rock cover) on the sites. -Maintain equipment and fuel storage tanks to ensure that they are in good condition thus preventing leaks and spills. -The oil storage and use locations should be visually inspected for container or tank condition and spills. -Maintain a fully provisioned, easily accessed spill kit. Spill kits should 	<p>No complaints of pollutants on the soils and eventually in the water due to small-scale mining activities</p> <p>No visible oil spills on the ground or pollution spots.</p>	EHS Officer	<p>Complaint's logbook</p> <p>Waste containers</p> <p>Non-permeable material to cover the ground surface at areas where hydrocarbons and potential pollutants are utilized.</p>	Throughout Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>be located throughout the active project sites contain the floor dry absorbent material and absorbent booms, pads, mats. These would be suitable for ground surface areas that are covered mainly by hard rocks.</p> <p>All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures.</p> <p>The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible.</p> <p>Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training and mentor new workers as they get hired.</p> <p>MCs site areas where hydrocarbons will be utilized, the surface should be covered with an impermeable plastic liner (e.g., an HDPE liner), carefully placed to minimize risk of puncturing, to prevent any spillages from getting</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>into direct contact with the soils and prevent eventual infiltration into the ground.</p> <p>Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site.</p> <p>In cases of accidental fuel or oil spills on the soils from site vehicles, machinery and equipment, the polluted soil should be removed immediately and put in a designate waste type container for later disposal as per the preceding bullet point. The removed polluted soil should either be completely disposed of or cleaned and returned to where it was taken from on site or can be replaced with a cleaner soil. This is to ensure that the pollutants contained in the soil does not infiltrate into the site soils and eventually reach to groundwater.</p> <p>Although fuel (diesel) required for operational equipment will be stored in a tank mounted on a mobile trailer, drip trays must be readily available on this trailer and monitored to ensure that accidental fuel spills along the tank trailer path/route around the MCs sites</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>are cleaned on time (soon after the spill has happened).</p> <p>If any accidental pollution occurs on site soil, theAny oil-spill polluted soil must be collected and transported away from the site to an approved and appropriately classified hazardous waste treatment facility.</p> <p>Washing of equipment contaminated hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources.</p>				
Biodiversity	Loss of Fauna and Flora	<p>Fauna</p> <p>The project workers should refrain from killing species (big or small and all types) that may be found on and around the site.</p> <p>Workers should refrain from disturbing and poaching animal species found on the MCs and surrounding areas.</p> <p>Access roads (even existing ones) should be utilized appropriately in a manner that disturbs minimal land</p>	<p>No disturbance to unmarked areas.</p> <p>No complaints from locals regarding unauthorised vegetation removal or cutting down of trees.</p> <p>No complaints of wildlife hunting by the project personnel.</p>	EHS Officer	<p>Barricading tape (to indicate working areas)</p> <p>Complaint logbook</p>	Throughout the Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>areas as possible, thus minimizing faunal habitat destruction.</p> <p>Make use of the existing road network as much as possible and avoid off-road driving to reduce the risk of habitat destruction and small faunal species in burrows.</p> <p>Vegetation found on the site, but not in the targeted mining areas should not be removed but left to preserve biodiversity on the site.</p> <p>Breeding sites for faunal species should not be disturbed.</p> <p>Environmental awareness on the importance of biodiversity preservation should be provided to the workers.</p> <p>Flora:</p> <p>The Proponent should avoid unnecessary removal of vegetation, thus promoting a balance between biodiversity and their operations.</p> <p>Vegetation found on the site, but not in the targeted mining areas should not be removed but left to preserve biodiversity on the site.</p> <p>Movement of vehicle and machinery should be restricted to</p>	<p>No intentional disturbance and destruction of site vegetation and faunal species</p> <p>Visible preservation of onsite vegetation</p>			

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>existing roads and tracks to prevent unnecessary damage to the vegetation.</p> <p>Onsite vegetation should not be cut, damaged, or used for any project related activities without prior approval.</p> <p>Design access roads appropriately in a manner that disturbs minimal land areas as possible.</p> <p>Make use of the existing road network as much as possible and avoid off-road driving, thus minimizing onsite floral destruction.</p> <p>Vegetation clearing to be kept to a minimum. The vegetation of the site is largely low and open and therefore whole-sale vegetation clearing should only be applied where necessary and within the development footprint.</p> <p>Vegetation found on the site, but not in the targeted areas should not be removed but left to preserve biodiversity on the site.</p> <p>No-go areas should be identified prior to operation to prevent disturbances in the current preserved ecosystems.</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		Environmental awareness on the importance of floral biodiversity preservation should be provided to the workers.				
Illegal hunting	Illegal hunting of wildlife	No wildlife hunting is permitted. Site personnel should refrain from killing/poaching or intentionally disturbing wildlife, or any faunal species found on site and around the MCs sites.	Incident reports of illegal hunting of wildlife by the crew.	EHS Officer	Complaint's logbook MEFT Parks' Division Anti-poaching Police Unit	Throughout operational phase
Land Use	Conflict between neighbouring land uses and small-scale mining activities	Small-scale mining activities should not in any hinder the existing land uses within the MCs but rather promote co-existence throughout the operations while respecting other land users. The project workers and vehicles should be limited to the actual MCs active sites only but not unnecessarily wander and drive around other land uses sites, respectively. The Proponent should ensure that their activities comply with the conditions set by the competent, regulatory, and affected authorities such that the proposed small-scale mining activities do not severely	Land access and use permits/authorizations. Compliance with conditions set within operational permits by relevant and affected authorities. Little to no complaints of significant interference from the neighbouring land users	PRO Proponent EHS Officer/ECO	Proponent Relevant authorities (MEFT, MME, etc.)	Throughout the Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		impact the different existing activities around the MCS.				
<u>Landscape Aesthetics</u> of the area	Impact on Tourism and Visual aspects	<p>The Proponent should consider the implementation of continuous rehabilitation programme, by using topsoil and overburden waste rocks and restoring and vegetation harmed through the process, to visually maintain the landscape's natural setting.</p> <p>The Proponent should not create unnecessary routes (access roads), which lead to landscape scarring on site by utilizing existing road trucks as far as possible to minimize the creation of unnecessary and long-term footprints.</p> <p>The Proponent should carry out progressive working and restoration/rehabilitation over the shortest timescale possible, to avoid excessive areas of disturbance on site.</p> <p>In the case that two or more confirmed targets for detailed mining activities are close to the roads, consider working as fast as possible on sites that are closest to the roads to ensure that the</p>	<p>No further major contribution to the visual impact in the area.</p> <p>No complaints from the locals regarding major eyesore due to unmanaged site restoration/rehabilitation</p> <p>Visible progressive backfilling done to reduce landscape contrast.</p>	<p>Proponent</p> <p>Site/Project Manager</p>	Complaint's logbook	Throughout the Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>presence of trucks and associated structures is shortened.</p> <p>Avoid using vehicles, equipment, machinery and even ablution facilities with different contrasting colours so that they do not cause a significant contrast on site (different bright colours present on site).</p>				
Road use and safety	Increase in vehicular traffic flow	<p>Vehicles should be driven only on existing access roads and necessary temporary access roads only leading to MCs mapped sites; no new roads should be constructed.</p> <p>The transportation of Operational materials, equipment and machinery should be limited to once or twice a week only, but not every day.</p> <p>The heavy truck loads should comply with the maximum allowed limit while transporting materials and equipment/machinery on the public and access roads.</p> <p>The carted water into the area from outside the project area and Usakos should be done once or twice a week in container that can supply and store water for most of</p>	<p>No complaints from members of the public regarding vehicular traffic issues related to the project activities.</p> <p>All personnel operating the project vehicles and machinery are appropriately licensed and possession of valid driving licenses.</p> <p>Demarcated areas for parking, offloading, and loading zones are on sites.</p> <p>If required, site access road permits obtained,</p>	<p>Proponent</p> <p>EHS Officer/ECO</p>	None	Throughout Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>the week, thus reducing the number of trucks on the road.</p> <p>Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses.</p> <p>Vehicle drivers should adhere to the road safety rules.</p> <p>Drivers should drive slowly (40km/hour or less), and on the lookout for wildlife and people.</p> <p>Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents because of mechanical faults of vehicles.</p> <p>Vehicle drivers should only make use of designated site access roads provided.</p> <p>Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol.</p> <p>Sufficient parking area for all project vehicles should be provided for and clearly demarcated on sites.</p> <p>The Proponent should make provision for safe materials and equipment offloading and loading areas on sites.</p>	<p>and requirements fulfilled.</p> <p>No creation of unnecessary tracks on site.</p>			

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>No heavy trucks or project related vehicles should be parked outside the project site boundary or demarcated areas for such purpose.</p> <p>Truck movements, frequency, times, and routes should be carefully planned and scheduled – please refer to the next point.</p> <p>To control traffic movement on site, deliveries from and to site should be carefully scheduled. This should optimally be during weekdays and between the hours of 8am and 5pm.</p>				
Health and safety Health and safety	General health and safety associated with project activities in both phases	<p>The Labour Act's Health and Safety Regulations should be complied with.</p> <p>As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs.</p> <p>When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots,</p>	Comprehensive health and safety plan for all mining activities compiled.	<p>Proponent</p> <p>Site/Project Manager</p> <p>EHS Officer/ECO</p>	Occupational Health and Safety Personnel Health and Safety Trainings	Throughout the project phase and trainings offered as and when required

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>earplugs, dust masks, safety glasses, etc.</p> <p>Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</p> <p>No employee should be allowed to consume alcohol or other intoxicants prior to and during working hours as this may lead to mishandling of equipment which results into injuries and other health and safety risks.</p> <p>Employees should not be allowed on site if under the influence of alcohol or any intoxicants.</p> <p>Ensure that after completion of Operational holes, are put back into the hole and the holes filled and levelled.</p> <p>An emergency preparedness plan should be compiled, and all personnel appropriately trained.</p> <p>The site to be equipped with "danger" or "cautionary" signs for any potential danger or risk area identified on site.</p> <p>All employees and contractors (personnel) to be trained on environmental awareness, the</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		Proponent's internal Environmental Health and Safety Policy, Environmental Management Plan, and engagement with key stakeholders, specifically the key government ministries and farmers.				
	Potential increase of prevalence of HIV and AIDS, as well as other sexually transmitted diseases (STIs) prevalence	<p>The workers should be engaged in health talks and training about the dangers of engaging in unprotected sexual relations which results in contracting HIV/AIDS and other sexual related infections.</p> <p>Provision of condoms and sex education through distribution of pamphlets. These pamphlets can be obtained from local health facilities.</p>	No new infections recorded linked to mine workers	<p>Proponent</p> <p>EHS Officer/ECO</p>	<p>Occupational health and safety personnel</p> <p>Sex and Health Education/Awareness</p> <p>Provision of condoms at the accommodation facilities</p>	Throughout Operational phase
	Accidental fire outbreak	<p>Portable fire extinguishers should be provided on site.</p> <p>No open fires to be created by operational personnel.</p> <p>Potential flammable areas and structures such as fuel storage</p>	No wildfires recorded (due to presence of workers)	<p>Proponent</p> <p>EHS Officer</p>	Fire extinguishers (1 per vehicle) and 1 per working site	Throughout Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		tanks should be marked as such with clearly visible signage.				
Archaeology and heritage	Accidental disturbance and destruction of archaeological or heritage objects and sites	<p>Contractors working on the site should be made aware that under the National Heritage Act, 2004 (Act No. 27 of 2004) any items protected under the definition of heritage found during development should be reported to the National Heritage Council.</p> <p>The Proponent should consider having a qualified and experienced archaeologist on standby/call during operational phase and as required during the entire operational phase. This action will be to assist on the possible of uncovering of sub-surface graves or other cultural/heritage objects and advice the Proponent accordingly.</p> <p>Pre-identified sites of heritage/archaeological significance should be regarded as no go zones for mining activity within the MCs area.</p> <p>Graves or any archaeological significant objects discovered on the site during operation should not be disturbed but are to be reported</p>	Preservation of all artefacts and objects that are discovered on and around project site	<p>EHS Officer</p> <p>Operator</p> <p>Foreman</p> <p>Superintended</p> <p>Archaeologist</p>	<p>Salvage equipment</p> <p>Flag tapes</p> <p>GPS (site marking)</p>	As and when required, i.e., prior to site set up, and during operations.

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>to the project Environmental officer or National Heritage Council offices.</p> <p>Detailed field survey should be carried out if suspected archaeological resources or major natural cavities / shelters have been unearthed during the operations.</p> <p>Site specific management and mitigation measures by the archaeologist should be implemented.</p> <p>The worksite/ manager should familiarise themselves with the National Heritage Council's Chance Finds Procedure (CFP) - please refer to Appendix 1 of this document and if uncertain about the procedure should receive training by a suitably qualified archaeologist with respect to the identification of archaeological/heritage remains and the procedures to follow if such remains are discovered throughout the project activities' duration.</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>Emphasis: sub-surface materials may still be lying hidden from surface surveys. Therefore, absence (during surface survey some site areas) is not evidence of absence all together. The recommended and necessary measures, monitoring and reporting procedures must be followed in the event of a chance find, to ensure compliance with heritage laws and policies for best practice.</p>				
Littering and waste management (general waste and sanitation)	Environmental Pollution	<p>Both biodegradable and non-biodegradable wastes must be stored in separate containers and collected regularly for disposal at a certified landfill/dump site.</p> <p>Any hazardous waste that may have an impact on the animals, vegetation or the environment should be handled cautiously and disposed of in accordance with hazardous waste management guidelines.</p> <p>No refuelling of vehicles on site. Refuelling should only be done in</p>	<p>No visible litter around the project area</p> <p>Provision of sufficient waste storage containers</p> <p>Waste management awareness</p>	EHS Officer/ECO	Waste storage containers	Throughout Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>Usakos at a designated refuelling facility.</p> <p>Workers should be sensitized to dispose of waste in a responsible manner and not to litter.</p> <p>After each daily works, the Proponent should ensure that there are no wastes left on the sites.</p> <p>All domestic and general operational waste produced daily should be contained until such that time it will be transported to designated waste sites.</p> <p>No waste may be buried or burned on site or anywhere else.</p> <p>The MCs sites should be equipped with separate waste bins for hazardous and general waste/domestic.</p> <p>Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest treatment facility.</p> <p>Accidental oil spills should be taken care of by removing and treating soils affected by the spill.</p> <p>A penalty system for irresponsible disposal of waste on site and</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>anywhere in the area should be implemented.</p> <p>Careful storage and handling of hydrocarbons on site is essential.</p> <p>Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of in accordance with municipal wastewater discharge standards so that they do not contaminate surrounding soils and eventually groundwater.</p> <p>An emergency plan should be available for major/minor spills at the site during operation activities (with consideration of air, groundwater, soil, and surface water) and during the transportation of the products(s) to the sites.</p> <p>After each daily works, there should not be waste left scattered on site, but rather be disposed of in allocated site waste containers.</p> <p>No waste may be buried or burned on site or anywhere else throughout the project lifecycle.</p> <p>All domestic and general waste produced daily should be contained until such that time it will be</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>transported to designated waste sites on a weekly basis.</p> <p>The sites should be equipped with separate waste bins for hazardous and general waste/domestic.</p> <p>Hazardous waste, including emptied chemical containers should be safely stored on site until such time that they are transported to the nearby approved hazardous waste sites for safe disposal.</p> <p>A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented</p>				
	Wastewater generated by mining workers living on-site.	<p>Provision of toilet facilities for workers (mobile/portable chemical toilet).</p> <p>Emptying of chemical toilets according to the manufacturer's specifications. Treating latrine waste to render non-polluting.</p>	Adequate toilet and basic ablution facilities on site.	<p>Proponent</p> <p>EHS Officer/ECO</p>	<p>Chemical toilets</p> <p>Sewage removal operator</p> <p>waste treatment agents/chemicals</p>	Throughout Operational phase
Air Quality	Dust generation	The Proponent should ensure that the operational schedule is limited to the given number of days of the week, and not every day. This will	No complaints from the public about vehicle emissions and dust generation.	EHS Officer/ECO	Complaint's logbook	Throughout Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>keep the vehicle-related dust level minimal in the area.</p> <p>Given the limited vegetation cover, soils are exposed, it is highly probable that more dust will be generated from mining activities (excavating). It is, therefore, advised that during extremely windy days, a reasonable amount of water should be used to suppress the dust that may be emanating from certain mining activities.</p> <p>Operational vehicles should not drive at a speed more than 40 km/h to avoid dust generation around and within the site area.</p> <p>The Proponent should ensure that the operational schedule is limited to the given number of days of the week, and not every day. This will keep the vehicle-related dust level minimal in the area.</p> <p>Dust control measures such as reasonable amount of water spray should be used on access roads emitting a lot of dust and near MCs sites to suppress the dust that may be emanating from certain operational areas on the MCs.</p>	Visible efforts to curb dust		Dust suppressant (Water)	

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers on sites, where they are exposed to dust.</p> <p>Excavating equipment should be regularly maintained to ensure excavation is conducted efficiently and so to reduce dust generation and harmful gaseous emissions.</p>				
Noise	Nuisance	<p>The transportation of Operational materials, equipment and machinery should be limited to once or twice a week only, but not every day.</p> <p>Noise from project vehicles and equipment operations' vehicles and equipment on the working sites of the MCs should be at acceptable levels.</p> <p>The operational times should be set such that, no such activities are carried out during the night or very early in the mornings (to be limited between 8am and 5pm on weekdays).</p> <p>Operational hours should be restricted to between 08h00 and 17h00 to avoid noise and vibrations</p>	Complaints from neighbouring land users about excessive noise.	EHS Officer/ECO	Complaint's logbook	Throughout Operational phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>generated by operational equipment and the movement of vehicles before or after hours.</p> <p>When operating the excavation or close to noise-producing equipment and machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce noise exposure. These PPE should be regularly checked/tested for effectiveness and on detected malfunction, the PPE should be replaced as soon as possible.</p> <p>When operating machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to noise</p>				
PROGRESSIVE REHABILITATION AND DECOMMISSIONING PHASE						
Rehabilitation	Disturbance and damaging of land site land	<p>All Excavated pits related to the project activities should be capped and backfilled, respectively.</p> <p>All waste generated and stored on site during operation activities should be disposed of at the respective nearest solid waste management sites.</p>	<p>Capped boreholes and backfilled pits</p> <p>No sign of waste or littering seen on site and around site areas.</p> <p>Carrying away of waste, and removal of vehicles and equipment from site</p>	Proponent	<p>Excavators and other backfilling/demolishing machinery</p> <p>Record of pits excavated, and boreholes drilled (if any)</p>	<p>Progressive rehabilitation done throughout the Operational phase and complete decommission and rehabilitation done after</p>

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Resources	Timeline
		<p>The stockpiled topsoil should be levelled soon after completion of works at sites.</p> <p>Any temporary setup on site should be dismantled, and the area rehabilitated as far as practicable, to their original state.</p> <p>Provision of both financial and technical resources for progressive rehabilitation.</p>	<p>No stockpiled topsoil (topsoil is levelled after completion of each work)</p> <p>Campsite dismantled and materials taken away from site.</p> <p>Visible signs of stockpiled topsoil</p>		<p>Waste containers on sites</p> <p>Photo records of backfilled sites</p> <p>Records of finances set aside for decommissioning activities</p>	<p>completion of mining works.</p>

2.4 Phase 2: Monitoring Phase Management Action Plans (Monitoring Plan)

In order to support and ensure that the proposed mitigation measures are achieving the desired results, a monitoring plan must be implemented. The monitoring action plans recommended for planned mining works are presented in **Table 5** below.

Table 54: Management action plans for the Monitoring Phase

Environmental Feature	Impact	Monitoring Actions	Responsible person(s) / Implementation responsibility	Frequent	Threshold	Action if threshold is exceeded
Soils	Loss of topsoil	All measures should be considered to prevent the loss of topsoil	EHS Officer/ECO and Site Manager	weekly	Proliferation of new vehicle tracks	Rehabilitation of affected areas
Monitoring	EMP non-compliance	The ECO or the Proponent/Contractor should monitor the implementation of this EMP to ensure compliance. The ECO(s) should inspect the site throughout the operational period and after completion.	EHS Officer/ECO	Daily	Increase in health, safety and environmental damage incidence	Daily safety talks, Remedy the consequences
Biodiversity	Loss of biodiversity	Comply to marked no-go areas and avoid areas sensitive to any type of disturbance. Clear only footprint areas to maintain as much of the remaining natural vegetation on site and to prevent loss of habitat (if so, advised by MEFT).	EHS Officer/ECO Workers involved in this phase	Weekly	Vegetation clearance outside of marked areas.	Rehabilitation of affected areas to the satisfaction of the EHS Officer
Health and Safety	Health and safety of the workers	workers should be trained on how to handle materials and equipment on site (if they do not already know how to) to avoid injuries. Operational equipment and materials transported to site should be securely fastened to the vehicles (trucks and cars). This is to ensure that the	EHS Officer/ECO Worker Involved in this phase	Daily/Weekly	Health and safety incident	Remedy the consequences

Environmental Feature	Impact	Monitoring Actions	Responsible person(s) / Implementation responsibility	Frequent	Threshold	Action if threshold is exceeded
		<p>materials and equipment do not fall off the vehicles and cause injuries to anyone while transporting them.</p> <p>The proponent and EHS Officer/ECO should ensure that all personnel are provided with appropriate personal protective equipment (PPE), such as gloves, masks, safety boots, safety glasses and hard hats always during operational hours on site to prevent serious injuries or loss of life.</p> <p>No employee should be allowed to drink alcohol prior to and during working hours as this may lead to mishandling of equipment which results into injuries and other health and safety risks.</p>				
Neighbouring land users to the site	Disturbance	Operational works schedule should be limited to normal working hours, between 08h00 and 17h00. This is to ensure generated noise does not become nuisance to the neighbours.	EHS Officer/ECO Site Manager	Weekly	A logged complaint about excessive noise	Revision of site activities
Waste	Environmental Pollution	The mining site should be always kept tidy.	EHS Officer/ECO	Daily	Visible litter around project site	Clean-up of the affected areas and ensuring mining

Environmental Feature	Impact	Monitoring Actions	Responsible person(s) / Implementation responsibility	Frequent	Threshold	Action if threshold is exceeded
		<p>All domestic and general construction waste produced daily should be cleaned and contained daily to prevent environmental pollution.</p> <p>Separate waste containers (bins) for hazardous and domestic / general waste must be provided on site to avoid mixing of waste.</p>	All workers involved in this phase.		A logged complaint	workers utilise waste containers provided.
Transport	Transportation of workers to and from site	<p>Workers will be transported, in an SUV/ bus (or similar suitable passenger vehicle) to and from site prevent inhaling of dust or being exposed to blowing desert winds.</p> <p>No off-road driving</p>	EHS Officer/ECO	Daily	A logged complaint about bad form of transport affecting occupational safety and health of workers	
Vehicular traffic safety	Increase in local traffic flow.	<p>All drivers of the project vehicles should be in possession of valid and appropriate driving licenses to operate such vehicles.</p> <p>Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents because of mechanical faults of vehicles.</p>	EHS Officer/ECO	Weekly	A logged complaint about traffic increase or damage to roads	Find alternative access roads for the team. Rehabilitation of affected roads

Environmental Feature	Impact	Monitoring Actions	Responsible person(s) / Implementation responsibility	Frequent	Threshold	Action if threshold is exceeded
		Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol. No heavy trucks or project related vehicles should be parked on biologically sensitive areas.				

2.5 Decommissioning and Rehabilitation Phase

Successful rehabilitation requires careful consideration of the local ecological context in combination with rehabilitation goals. The most important steps in undertaking a successful rehabilitation are planning and environmental awareness (environmental education) on the importance of progressive rehabilitation (or post-activity rehabilitation) and its importance to the environment. Furthermore, to successfully implement the planned rehabilitation, practically, this will depend on a few factors, namely the rehabilitation program, characteristics of the site, nature of disturbance, rehabilitation methods, as well as resources availability.

Rehabilitation of the MCs site may include the re-vegetation of areas with species consistent with surrounding vegetation; refilling of trenches in such a way that subsoil is replaced first and topsoil replaces last.

Any excavated pits should not only be filled with sand alone, as wind will scour the sand and re-establish the holes. Necessary landscaping of mining areas will be undertaken upon completion of each stage of operational.

Site Specific Rehabilitation Plan

To ensure that they do their best to rehabilitate the disturbed areas, the Proponent intends to:

- Utilize stockpiled subsoil and topsoil to back fill the excavated pits/trenches.
- Make financial provision that will be used for post-operational rehabilitation program.
- Backfilling of all mining pits with loose materials.
- Levelling of topsoil that was stockpiled for mining purposes.
- Removal of project vehicles and equipment from the site and taken to designated parking facility off site.
- All project support structures such as ablution facility (toilet and washroom system), and storage containers/tanks shall be demolished, and the waste taken to designated sites. The site areas on which these structures were set up will be rehabilitated to pre-operational state.

- All accumulated waste (hazardous, solid, and general) up until the cessation of small-scale mining activities will be removed site and transported to designated off site waste management facilities.

Decommissioning and rehabilitation will involve the following:

- Necessary landscaping will be undertaken upon completion of each phase of operation
- Capping or backfilling of all excavated pits with loose materials.
- Collecting and disposing domestic waste at the nearest landfill/ dumpsite.
- Leveling the stockpiled top soil during operational phase.

Any temporary setup of camps should be dismantled, and the area should be rehabilitated as far as possible to its original state

3 ENVIRONMENTAL MONITORING AND REPORTING

In order to minimize the "medium" and uphold the "low" significance ratings of impacts identified and assessed in the EA report. Monitoring reports are to be compiled and submitted to the Department of Environmental Affairs (DEA) for archiving. This practice will make any considerations for ECC renewal easy when it is about to expire. Therefore, the Proponent should meritoriously monitor and submit the reports to the DEA. The submission is not only done for record keeping purposes, but also in compliance with the environmental legislation.

4 RECOMMENDATION AND CONCLUSION

It is recommended that the mechanical mining method for on MCs No. 71309 – 71312 may be granted, subject to the following recommendations:

- All mitigations provided in this Report and the management action plans in the EMP should be implemented and monitoring conducted as recommended.
- All the necessary environmental and social (occupational health and safety) precautions provided should be adhered to.
- Site areas where small-scale mining activities such as excavated pits have ceased should be rehabilitated, as far as practicable, to their original state.

- The monitoring of the implementation of mitigation measures should be conducted, applicable impact's actions taken, reporting done and recorded as recommended in the Draft EMP.

It is a known fact that the proposed area for small-scale mining works is of question and therefore potential negative and positive impacts stemming from the mining activities were acknowledged, assessed and mitigation measures made thereof. The mitigation measures indorsed in the EA report and management action plans provided in the draft Environmental Management Plan can be considered adequate to elude and/or reduce the risks to acceptable levels. Therefore, Excel Dynamic Solutions (Pty) Ltd assures that these measures are sufficient to enable environmentally sustainable and safe mining works on the MCs. Therefore, it is recommended that a written approval for the mechanical mining method may be issued on condition that the provided management measures and action plans are effectively implemented on site and monitored. ~~ThePredominantly~~, monitoring of the environmental components described in the EA should be conducted by the Proponent and applicable Competent Authorities. This is to ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed.

APPENDIX 1: CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020)

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found during development work. The procedure set out here covers the reporting and management of such finds.

Scope: The “*chance finds*” procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “*a person who discovers any archaeological objectmust as soon as practicable report the discovery to the Council*”. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Responsibility:

Operator:	To exercise due caution if archaeological remains are found
Foreman:	To secure site and advise management timeously
Superintendent:	To determine safe working boundary and request inspection
Archaeologist:	To inspect, identify, advise management, and recover remains

Procedure:Action by person identifying archaeological or heritage material:

- a) If operating machinery or equipment stop work
- b) Identify the site with flag tape
- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

- a) Report findings, site location and actions taken to superintendent

- b) Cease any works in immediate vicinity

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary
- c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by Archaeologist

- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area
- c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police
- d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.