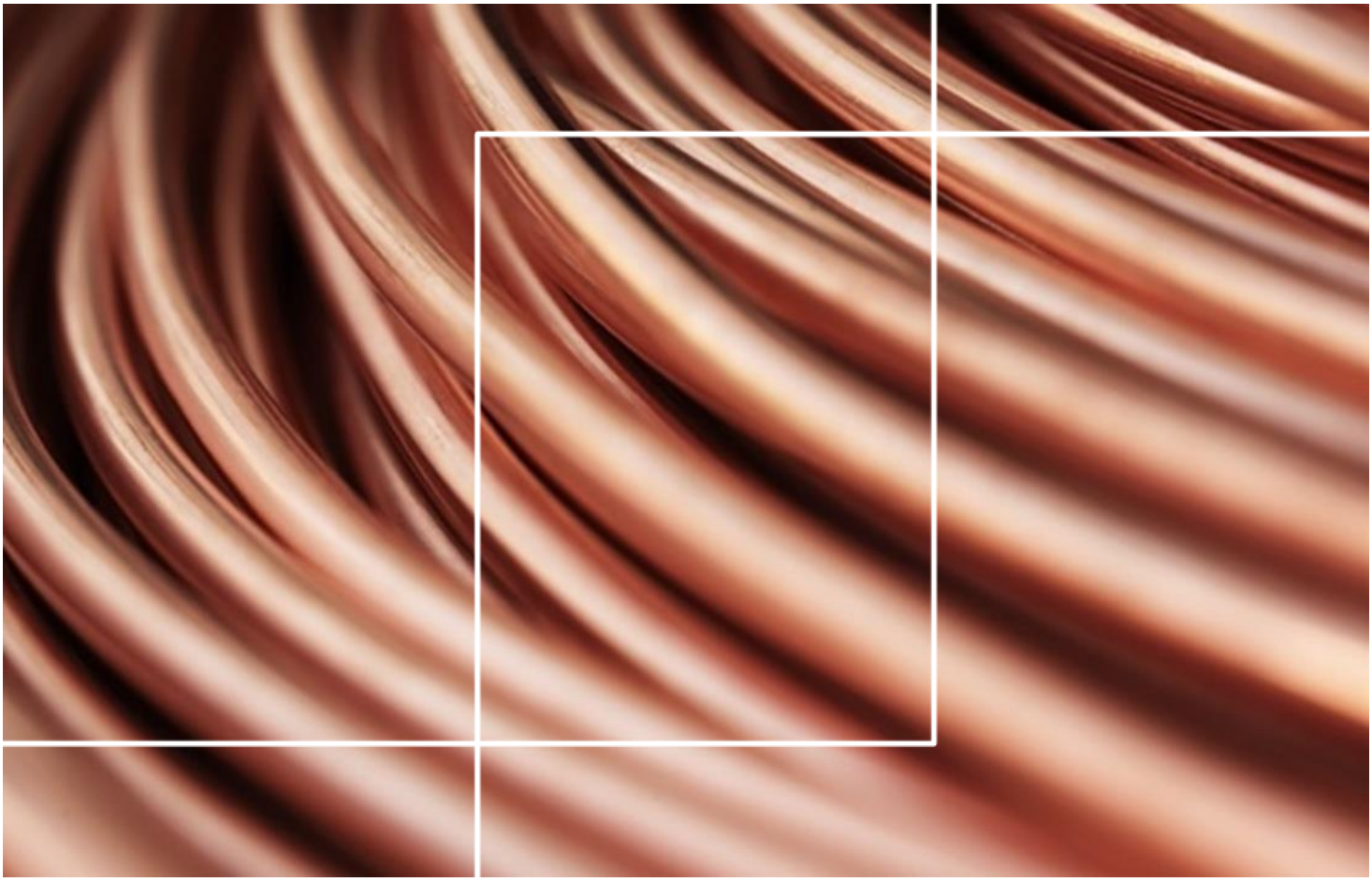

CRATON
Mining and Exploration
(Pty) Ltd

Submitted to: Craton Mining and Exploration (Pty) Ltd
Attention: Mr. Ingo Hofmaier
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REPORT ON:

OMITIOMIRE COPPER PROJECT ON ML 197 - ESMP

PROJECT NUMBER: ECC-134-394-REP-13-D

REPORT VERSION: REV 02

DATE: 12 JULY 2023

TITLE AND APPROVAL PAGE

Project Name:	Omitiomire Copper Project on ML 197 - ESMP
Client Company Name:	Craton Mining and Exploration (Pty) Ltd
Client Name:	Mr. Ingo Hofmaier
Ministry Reference:	APP-0010357/APP-001107
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Review Period	N/A

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DISCLAIMER

The report has been prepared by Environmental Compliance Consultancy Pty Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

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ABBREVIATIONS

ABBREVIATIONS	DESCRIPTION
CE	control efficiency
ECC	Environmental Compliance Consultancy
ECC	environmental clearance certificate
EMA	Environmental Management Act, No. 7 of 2007
EPL	exclusive prospecting licence
ESG	environmental, social and governance
ESMP	environmental and social management plan
ESIA	environmental and social impact assessment
GM	General manager (overall operations lead); see PM
HAZOP	Hazard and operability study
HSE	health, safety and environment
ICMM	International Council on Mining and Metals
LOM	life of mine
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
ML	mining licence
MME	Ministry of Mines and Energy
MSDS or SDS	material safety data sheet or safety data sheet
NHC	National Heritage Council
NSR	noise-sensitive receptor
OEM	original equipment manufacturer
PCP	pollution control ponds
PM	Project manager (overall construction lead); see GM
$PM_{2.5}$	particulate matter with an aerodynamic diameter of less than 2.5 µm
PM_{10}	particulate matter with an aerodynamic diameter of less than 10 µm
SOP	Standard operating procedure
SWMP	storm water management plan
ToR	terms of reference
TSP	total suspended particles (dust)
WRD	waste rock dump

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Environmental Compliance Consultancy (ECC) has been contracted by Craton Mining and Exploration (Pty) Ltd (Craton or Proponent), a Namibian company and subsidiary of Omico Copper Ltd, to prepare the environmental and social management plan (ESMP) for the environmental and social impact assessment (ESIA) of the proposed mining of base and precious metals on mining licence 197 (ML 197). The Omitiomire Copper Project (Project) is located in the Khomas Region, Namibia (Figure 1).

Craton was granted ML 197 in 2016 and the licence is valid until 6 March 2036. Prospecting and drilling have delineated a large, mainly copper sulphide deposit, with some oxides, which contain high proportions of copper and low proportions of iron.

ECC has compiled this final ESMP in terms of the Environmental Management Act (EMA) of 2007 and its associated regulations of 2012. The purpose of this ESMP is to support the Project scoping report and full environmental and social impact assessment (ESIA) report.

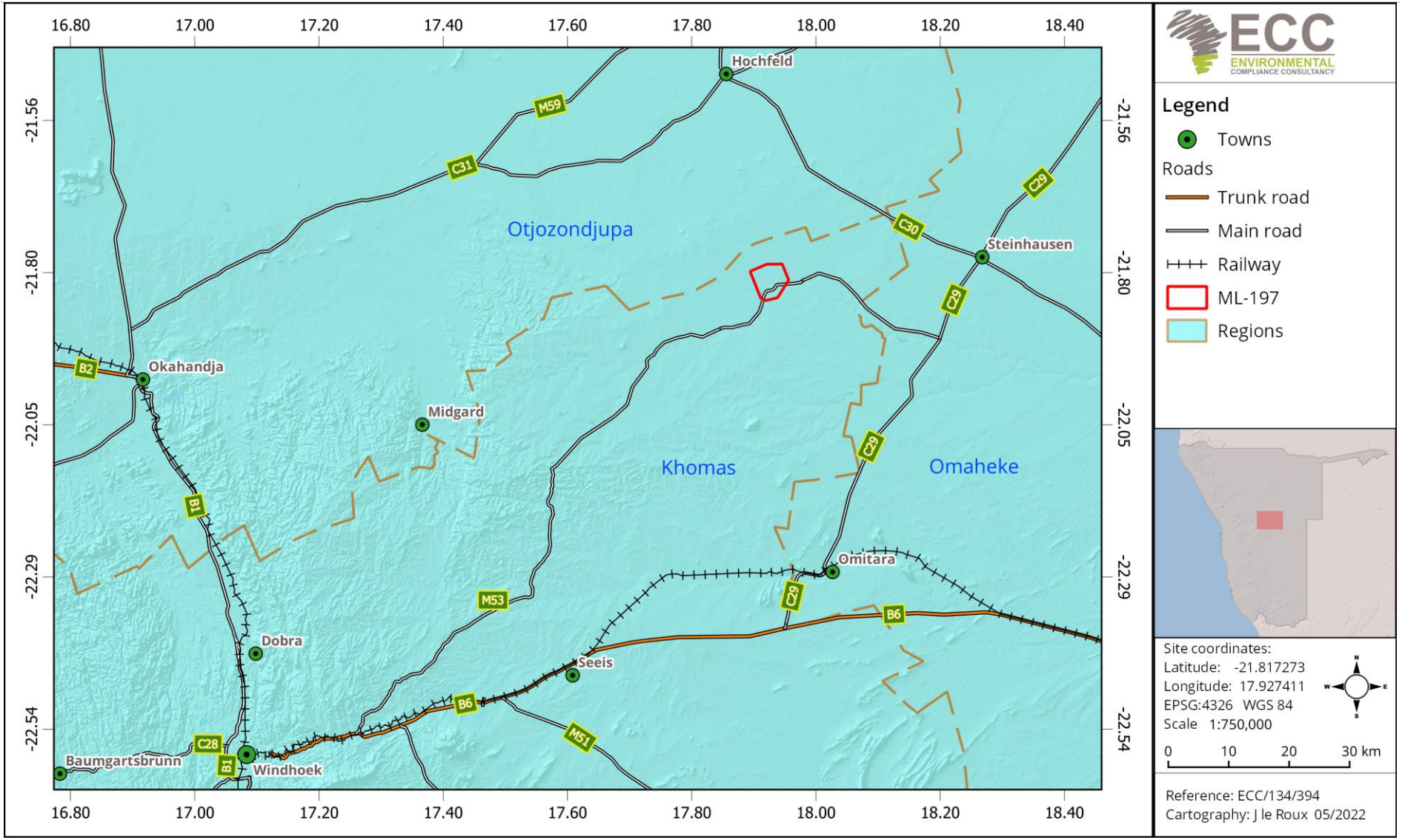

Figure 1: Locality map showing the location of the proposed Omitiomire copper project.

1.2 PURPOSE OF THE ESMP

This final ESMP is a comprehensive plan that outlines mitigation measures and management strategies to minimize environmental and social impacts of the proposed mining Project. It ensures compliance with legal obligations and provides protocols for effective implementation. This ESMP is based on findings from previous assessments and will be periodically reviewed and updated as needed. All personnel working on the Project must comply with the final ESMP approved by relevant authorities. It covers all activities related to construction, operation, and decommissioning of mining, processing, fuel storage, waste management, and linear infrastructure.

1.3 ENVIRONMENTAL REGULATORY REQUIREMENTS

The Environmental Management Act (EMA) of 2007 and its regulations mandate obtaining an environmental clearance certificate prior to engaging in listed activities, including mining. This report presents a final environmental and social management plan (ESMP) as part of the scoping report, which is a crucial step in assessing potential environmental and social impacts (ESIA) for the environmental and social management plan report. The final ESMP will be included as an appendix in the ESIA report, to be prepared after the assessment phase. Upon completion of public review, the final ESIA report with the ESMP will be submitted for a record of decision by the Ministry of Environment and Forestry (MEFT) with support from the competent authority (MME). If approved, the Proponent will be issued a three-year environmental clearance certificate for the Project and activities outlined in the scoping and ESIA reports, with the ESMP serving as the detailed compliance requirements and conditions of the certificate.

1.4 MANAGEMENT OF THE APPROVED ESMP

The Proponent, and the highest-ranking person in the company, holds the environmental clearance certificate and is responsible for implementing and managing the approved ESMP. Delegation of responsibility may occur to the Project Manager during construction and the General Manager during operations. The ESMP is reviewed, amended, and reapproved every three years, and before mining activities commence, aligning with the renewal of the environmental clearance certificate. Compliance with the ESMP is verified through regular monitoring, including daily, weekly, monthly, quarterly, biannual, and annual inspections and audits. Biannual compliance reports are submitted to the Department of Environmental Affairs, and renewal of the environmental clearance certificate requires a comprehensive three-year compliance report, including biannual reports, upon application for reapproval of the ESMP.

The approved ESMP must be circulated and or communicated to all relevant employees and contractors and may be made available on the Environmental Compliance Consultancy (ECC) website https://eccenvironmental.com/download/the-proposed-omitiomire-copper-mine-on-ml-197/ .

1.5 LIMITATIONS, UNCERTAINTIES, AND ASSUMPTIONS OF THIS ESMP

This ESMP does not include measures for compliance with statutory occupational health and safety requirements. This will be provided in the safety management plan to be developed by the Proponent.

Where there is any conflict between the provisions of this ESMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, Project approval conditions, permits, standards, guidelines, and relevant laws), the contract and statutory requirements are to take precedence provided they are not in conflict with any environmental law or will in any way damage the environment beyond the limits set in the approved ESMP.

The information contained in this ESMP is based on the Project description as provided in the final environmental and social scoping report and its associated specialist studies. Where the design or construction methods alter during the course of the ESIA process, this ESMP will be updated to reflect the additional data as the assessment phase proceeds.

1.6 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Compliance Consultancy (ECC) (Pty) Ltd (Reg. No. CRN: 2022/0593) has prepared this final ESMP on behalf of the Proponent. This report has been authored by employees of ECC, who have no material interest in the outcome of this report, nor do any of the ECC team have any interest that could be reasonably regarded as being capable of affecting their independence in the preparation of this report. ECC is independent from the Proponent and has no vested or financial interest in the Project, except for fair remuneration for professional fees rendered based upon agreed commercial rates. Payment of these fees is in no way contingent on the results of this report or the assessment, or a record of decision issued by Government. No member or employee of ECC is, or is intending to be, a director, officer, or any other direct employee of Craton. No member or employee of ECC has, or has had, any shareholding in Craton. All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

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Email: info@eccenvironmental.com

2 ENVIRONMENTAL MANAGEMENT FRAMEWORK

This ESMP provides measures, guidelines and procedures for managing and mitigating potential environmental and social impacts. The ESMP also indicates monitoring and reporting guidelines and sets responsibilities for those carrying out management and mitigation measures.

2.1 OBJECTIVES AND TARGETS

Environmental objectives and targets have been developed so that mining activities have minimal potential impacts on the environment, as far as reasonably practicable. Environmental objectives for the project are as follows:

- Zero pollution incidents
- Minimal vegetation clearing and earthworks
- Protect local flora and fauna
- Use natural resources effectively and efficiently, notably water and those related to climate change; and
- Maximise social and economic benefits, such as skills development, and mitigate adverse impacts.

2.2 ORGANISATIONAL STRUCTURE, ROLES AND RESPONSIBILITIES

The Proponent shall provide a project team to oversee and undertake the preparation of the site during construction and mining activities, which will be composed of the Proponent's personnel and contractors. A nominated role shall be identified to ensure the management and implementation of this ESMP is carried out throughout the project LOM. The Proponent shall be responsible for:

- Ensuring all members of the Project and operational team, including contractors, comply with the procedures set out in this ESMP;
- Ensuring that all persons are provided with sufficient training and supervision to fulfil this requirement;
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood; and
- Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this ESMP, and meet the responsibilities listed above.

The key personnel and environmental and social responsibilities of each role through the Project life are presented in

Table 1.

Table 1 – Examples of the roles and responsibilities

ROLE	RESPONSIBILITIES AND DUTIES
Proponent (CEO or designate, Project/General Manager (PM/GM)	– Responsible for the environmental, social and governance (ESG) strategy, policy and related targets and the implementation of the ESMP; – Ensures the environmental and social strategy and related policies are created and communicated to all personnel, employees, contractors, service providers and suppliers throughout the proposed Project; – Ensures that a training programme is developed and implemented such that employees understand the principles and guidelines of the ESMP; – Responsible for providing the resources required to complete the Project and related ESMP tasks; – Ensure this ESMP and related HSE/ESG procedures and plans (emergency response plan and risk registers, etc.) are updated; – Appointment of the senior site leadership team; and – Ensure all workers are inducted on safety measures.
Mine Manager	– Oversee mining activities; – Monitor daily mining operations and ensure adherence by personnel to the ESMP; – Ensure that all contract workers, sub-contractors and visitors to the site are aware of the requirements of this ESMP, relevant to their roles, and always adhere to this ESMP; – Maintain an up-to-date register of employees and personnel (contractors, service providers and suppliers) who have completed site induction; – Ensure the implementation of a reporting system, bringing non-compliance or accidents to attention of the PM/GM; – Receive, recording and responding to complaints, with the support of the HSE/ESG manager; – Ensure adequate resources are available for the implementation of the ESMP; – Ensure safe and environmentally sound operations; – Maintain a community issues and concerns register and keep records of complaints, with the support of the HSE/ESG manager; and – Responsible for the management, maintenance, and revisions of this ESMP.
Operations/ Processing/ HSE Manager	– Oversee processing and related site activities; – Monitor daily processing (surface) operations and ensure adherence by personnel to the ESMP;

ROLE	RESPONSIBILITIES AND DUTIES
	– Ensure that all contract workers, sub-contractors and visitors to the site are aware of the requirements of this ESMP, relevant to their roles and always adhere to this ESMP; – Maintain an up-to-date register of employees and personnel (contractors, service providers and suppliers) who have completed site induction; – Ensure the implementation of a reporting system, bringing non-compliance or accidents to attention of the PM/GM; – Receive, recording and responding to complaints, with the support of the HSE/ESG manager; – Ensure adequate resources are available for the implementation of the ESMP; – Ensure safe and environmentally sound operations; – Maintain the community issues and concerns register and keep records of complaints, with the support of the HSE/ESG manager; and – Responsible for the management, maintenance, and revisions of this ESMP.
Employees	– Adhere to measures set out in the ESMP; – Ensure they have undertaken a site induction; and – Report any operations or conditions which deviate from the ESMP as well as any non-compliant issues or accidents to the HSE/ESG manager.

2.3 CONTRACTORS

Contractors working on site will receive a formal and documented induction, and shall be compliant with this ESMP, responsible for the following:

- Undertaking activities in accordance with this ESMP, relevant policies, procedures, management plans, statutory requirements and contract requirements/obligations;
- Implementing appropriate environmental and safety management measures;
- Reporting of environmental and social/community issues, including actual or potential environmental and social incidents and hazards, to the general manager; and
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.

Those working in high risk/hazard areas will receive additional specialised induction and training such as in the mine, processing area or with sulphuric acid and acid plant facilities and heap leach areas.

2.4 EMPLOYMENT

The Proponent and all contractors shall comply with the requirements of the Republic of Namibia Regulations for Labour, Health and Safety, and any amendments to these regulations. The following shall be complied with:

- Proponent shall ensure that residents in the area, nearby communities, within the region and of Namibia have access to information about job;
- The number of job opportunities shall be made known together with the associated skills and qualifications;
- The maximum length of time the job is likely to last for shall be indicated;
- Foreign workers without formal approval to work in Namibia shall not be hired; and

2.5 REGISTER OF ENVIRONMENTAL ASPECTS AND ASSOCIATED IMPACTS

A list of environmental and social aspects, with their associated potential impacts and commitments/requirements has been produced and is provided as Appendix A. This provides details associated with deliverables including measures identified for the prevention of pollution or damage to the environment and socio-economic conditions (mitigation) during the construction and mining phase. It includes those responsible for the mitigation measures. This register will be subject to regular review by the Proponent and updated when necessary.

3 COMMUNICATION AND TRAINING

To ensure potential risks and impacts are minimised it is vital that personnel are appropriately informed and trained on how to properly implement the ESMP. It is also important that regular communications are maintained with stakeholders (if applicable) and made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the ESMP.

3.1 COMMUNICATION

During construction, operations and exploration activities, the Project/General manager and respective area/department managers shall communicate site-wide environmental issues to contractors and employees, through the following means (as and when required):

- Ensure that responsibilities are assigned and communicated regularly;
- Ensure all personal are afforded the opportunity to attend an environmental site induction that sets out their requirements in relation to this ESMP;
- Ensuring audits and inspections are undertaken regularly on a risk-based schedule;
- Toolbox talks, including standard operating procedure (SOP) on incident response procedures;
- Deliver area-specific environmental briefings where required;
- Ensure all personnel have access to the ESMP;
- Ensure operators of key activities and environmentally sensitive operations are briefed and understand their requirements, and are provided specific training as required; and
- Ensure all personnel are encouraged to identify and communicate potential near misses and incidents.

This ESMP shall be distributed to the construction, mining, operation, maintenance and supply chain teams, including any contractors and personnel working on the mining site, to ensure that the environmental requirements are adequately communicated. Key activities and environmentally sensitive operations shall be briefed to workers and contractors.

During the construction and operations, communication between the management team shall include discussing any concerns received and actions to resolve them; any inspections, audits or non-conformance with this ESMP; and any objectives or target achievements.

3.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

All contractors, employees and visitors need to be made aware of emergency procedures and what they must do in the event of an emergency. This must be included in the induction and training material. Regular, documented emergency drills also need to be carried out to ensure competence of all contractors and employees in the different situations. An effective early warning method must be developed and installed to warn personnel of an emergency in a timely manner, both in the pit and on surface. As per Craton's values and aspirations, courageous leadership in safety, environmental and social aspects of the Project will be promoted by the Proponent and site management. All workers and contractors, especially those new to the site, often identify hazards, risks and potential impacts very quickly, and can usually propose mitigation. The Proponent and site management will promote such leadership behaviour to achieve operational excellence. Table 2 provides emergency contact details.

Table 2 – Emergency contact details

Town	Ambulance	Police	Fire brigade
Windhoek	+264 (81) 872 2233	+264 (61) 10 111	+264 (61) 290 3381

3.3 REGISTERING AND MANAGING SUGGESTIONS, ISSUES AND COMPLAINTS

Any issues or complaints received verbally by any personnel on site shall be recorded by the receiver, including the name and contact details of the complainant, date and time of the complaint, and the nature of the complaint. The information shall be given to the Project and/or General manager, depending on the phase of the Project development, and who is overall responsible for the management of issues/complaints and will provide a written response to the complainant. The Project/General manager shall inform the HSE manager of repeat, unresolved and serious issues, concerns or complaints. The Proponent must maintain a complaint register that details the name of the complainant, date and time of the complaint, the action is taken to resolve the issues and date of complaint handover.

The workforce shall be informed about the site issues and complaints register, its location and the person responsible. Stakeholders will be made aware of the public register. The complainant shall be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.

Both the public and site registers shall be kept for the duration of the Project and will be available for government review upon request; the public register shall be available for public review upon request. Table 3 below shows the environmental risks and issues, and mitigation and monitoring measures for socio-economic aspects.

Table 3 - Socio-economic aspects

Responsibility	– General/Project manager – HR manager – Procurement manager (buyer) – Mine manager – Operations/Process manager – Maintenance manager – HSE/ESG manager – Department heads – Employees
Potential issues or impacts	– Employment creation and skills development (both direct and indirect) – Opportunities during the mining phase (Approx. 700-800 jobs)
Management/ mitigation measures	– A policy regarding labour recruitment and employment will be compiled for use during the construction phase and early life of mine. The policy is to be reviewed and amended regularly; – Maximise Namibian employment and SME business opportunities to promote and improve the local economy, including support to qualify to provide goods and services to the mine; – Ensure that goods and services are sourced from Namibian SMEs as far as reasonably possible; – Recruitment will not take place at the gate to the mine, it will take place at designated offices, to be communicated to job seekers and the community; – Provide contractors with the policy regarding labour recruitment and employment for their implementation; – Ensure that this policy is clearly communicated to all employees and to the local and farming communities; – Fair and equitable recruitment opportunities will be afforded to all with equivalent qualifications; – Any job vacancy that is advertised must clearly indicate the required and appropriate skills for that position; – Actively downplay (through clear, simple, and persistent communication) inflated expectations of unlimited employment opportunities; – Where feasible make use of locally available raw materials, goods, and services as far as possible, and where appropriate, during construction and operation; – Ensure the recruitment and procurement practices include skills development for site workers to ensure that the expat workforce can be

	reduced as soon as practicable. The Proponent and site management will contribute to a Namibian mining-experienced workforce; and – To promote health and safety, on site health and safety programs will be promoted amongst all site workers whether related to safe approaches to all work and home activities, healthy living or mental health. For example, drug and alcohol abuse among all site workers on site is prohibited and a zero-tolerance policy will be fully enforced.
Monitoring requirements	
– Daily observations – Weekly checks – Monthly report from line manager	

3.4 TRAINING AND AWARENESS

All personnel working on the Project and on any Craton EPLs shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training, and experience.

3.5 SITE INDUCTION

All personnel involved in the Project and conducting work on any EPLs shall be inducted to the site with a specific environment and social awareness training, and health and safety issues. The environment and social awareness training shall ensure that personnel are familiar with the principles of this ESMP, the environment and social aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures. The Project/General manager shall ensure a register of completed training is maintained.

The site induction should include, but is not limited to the following:

- A general site-specific induction that outlines:
  - Why the environment needs to be protected and conserved?
  - Impacts of mining activities, both social and environmental.
  - Identifying potential aspects, impacts, risks and hazards.
  - What can be done to mitigate against impacts?
- The inductee's role and responsibilities concerning implementing the ESMP,
- The site's environmental rules/code of conduct,
- Details of how to deal with, and who to contact, should any environmental problems occur,
- Basic vegetation clearing principals and species identification sheets,
- The potential consequences of non-compliance with this ESMP and relevant statutory requirements, and the role of responsible people for the Project.

4 INCIDENT REPORTING

The Proponent must have an accident and incident reporting system that covers all applicable statutory requirements. The section below sets out the minimum requirements for incident reporting and should be used as a basis for incident reporting, if no incident reporting system exists.

4.1 MINOR INCIDENT OR "NEAR MISS"

Any incident or "near miss" involving the Proponent's workforce, any contractor, or its subcontractors or any third party's personnel, property, plant or equipment, must be:

1) Orally reported to the line supervisor:
    a. Immediately and without delay,
    b. Regardless of whether "lost time" incident to personnel has occurred, and/or
    c. Property or equipment has been damaged.
2) Written report completed and handed to the line supervisor or their nominated representative by the end of the shift, with the support of the HSE/ESG manager/coordinator/officer (responsible for incidents). The written report should:
    a. State all known facts and conditions at the time of the incident,
    b. Include a preliminary assessment of the most likely potential consequences of the incident under the current circumstances, and
    c. Suggest how to prevent a recurrence of the incident.
3) All large spills, serious incidents, such as lost-time or those related to mine waste, offsite, or groundwater shall be reported to the Project/General manager immediately by the line supervisor, with written follow up and regular updates until the incident is resolved to the satisfaction of the Project/General manager. The Project/General manager shall report such serious incidents to the CEO immediately with regular updates and actions/investigations/planning/budgeting to prevent recurrence.

4.2 SERIOUS INCIDENT

For any serious incident involving a fatality, offsite traffic accident or offsite spill, the incident scene must be left untouched until witnessed by a representative of the Police; Police must be accompanied by the HSE/ESG department safety personnel trained in incident investigation. Serious incident definition will be more specifically outlined by the risk register and specific emergency responses, such as fire, explosion, inrush of water to mine, fatality, multiple serious injury, failure of engineered structure, large spill of hazardous materials, chemical spill to water, etc.). This requirement does not preclude immediate first aid being administered and the location being made safe.

Serious incidents must be reported immediately to the relevant supervisor, who will report to the Project/General manager, who reports to company executive (Proponent). Verbal communication is acceptable but should be immediately followed with written reporting. Updates should be provided when new information is available, especially if the incident continues or is not yet controlled. No personnel are allowed to speak to the public or media, including friends and family; authorised personnel will do so. However, the Proponent should provide regular updates to employees, appropriate contractors, and the public. Communication with authorities will be done by authorised personnel as required by law, good international industry practices and corporate policy and procedure. The incident must immediately be followed by an incident investigation, when safe to do so, and an accompanying report.

Medical aids need to be reported by all departments to the Project/General manager in their monthly reports and monitored by the department head with the support of the HSE/ESG department to ensure the incidents are not being repeated and individuals are recovering and doing well, especially if assigned modified work.

4.3 INCIDENT REPORT AND CLOSE OUT

The respective head of department, with the support of the HSE/ESG manager, and their department and personnel trained in incident investigation, must investigate the cause of all work accidents and significant incidents and must provide the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

5 COMPLIANCE AND ENFORCEMENT

5.1 ENVIRONMENTAL INSPECTIONS AND COMPLIANCE MONITORING

Inspections and audits of the site will be managed and undertaken by the respective line department manager to check that the standards and procedures set out in this ESMP are being complied with and pollution control measures are in place and working correctly in their area of responsibility. All equipment will be inspected to ensure they are operating as per specification; no damage has been caused, and no leaks or spills have occurred. Any non-conformances shall be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action is taken and any necessary follow up measures required.

The application documentation for renewal of the environmental clearance certificate must include an audit report and copies of the five (5) bi-annual reports that were submitted every six (6) months for the three (3) year validity of the clearance certificate.

5.2 WATER PERMITS AND LICENCE

The Water Act, No. 54 of 1956 governs the use of water resources in Namibia and is the enforceable legislation for water related matters. The Water Resources Management Act, No. 11 of 2013, passed but pending regulations (not enforced), provides an improved framework for managing water resources based on the principles of integrated water resource management. While not enforced, it is considered best practice to adhere to its stipulations while ensuring compliance with the Water Act, No. 54 of 1956 at the same time.

5.3 WASTEWATER DISCHARGE PERMIT

If the operations produces wastewater, a permit must be obtained from the Department of Water Affairs (DWA). To obtain an effluent wastewater permit, the Proponent will complete the DWA application form and provide the following:

- Specification of the treatment system (type of technology);
- Description of major activities resulting in effluent generation;
- List of contaminants (analysis of effluent samples);
- Effluent quality;
- Points of discharge;
- Average quantities of incoming water, recycled water, final outflow; and
- Location point of final effluent discharge.

5.4 REPORTING

Reports shall be submitted to the Mining Commissioner in terms of the Minerals (Mining and Prospecting) Act, No. 33 of 1992. The Proponent is required to report monthly and annually, and a report shall be submitted on the 15th of the following month for monthly reports and 30 days after the anniversary of the grant date for annual reports.

Bi-annual ESMP compliance reports shall be submitted to the MEFT (Environmental Commissioner). These reports should include records of the monitoring and other deliverables of every aspect or programme described in the ESMP.

5.5 NON- COMPLIANCE

Where it has been identified that works are not compliant with this ESMP, the Project/General manager shall employ corrective actions so that the works return to being compliant as soon as possible. In instances where the requirements of the ESMP are not upheld, a non-conformance and corrective action notice shall be produced. The notice shall be generated during the inspections and the Project/General manager shall be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcomings.

A non-compliance event / situation is considered if, for example:

- There is evidence of a contravention of this ESMP and associated indicators or objectives;
- The department line manager and or contractor manager failed to comply with instructions issued by the environmental manager or qualified authority; or
- The department line manager and or contractor manager fail to respond to complaints from the public.

Non-compliant work will be stopped until corrective action(s) has been completed.

5.6 DISCIPLINARY ACTION

This ESMP is a legally binding document and non-compliance shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- Warnings;
- Fines / penalties;
- Legal action;
- Withdrawal of licence; and
- Suspension of work and dismissal.

The disciplinary action shall be determined according to the nature and extent of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

6 ENVIRONMENTAL MANAGEMENT PRINCIPLES

6.1 CONTINUAL IMPROVEMENT

The Proponent's team is responsible for reviewing and updating this ESMP, which will be supported by the monthly reports on the various areas of the site. As part of this process, the monthly reports will be reviewed, identifying any trends or significant areas of concern, as well as measures implemented to manage / resolve environmental or social issues. Compliance and legislative changes will be reviewed, and lessons learnt will be captured. The ESMP will be amended as required, and follow up training, awareness or updates will be provided.

Ongoing hazard identification through the review of the ESMP and supporting management plans and SOPs will ensure environmental impacts are avoided or minimised to as low as reasonably practicable as part of the continuous improvement of the ESMP.

6.2 BEST PRACTICE

The best practice management measures that will be complied with across site are listed in Table 4.

Table 4 - Environmental best practice measures to be implemented

Environmental aspect	Best practice requirement
Pollution prevention control	– HAZOP to be created and maintained; – Employees to be trained on relevant SOPs; – Plant and equipment to be maintained and serviced regularly; – Refuelling at designated locations, where possible; – Spill kits available where the risk of loss of containment is identified; – Bunds to be at least 110% of the largest container therein; and – Good housekeeping.
Solid waste management	– Good housekeeping (no littering); – Designated waste collection areas around site and one central location; – Bins labelled; – Waste to be separated and kept clean and tidy; and – Waste bins emptied on regular basis.

Environmental aspect	Best practice requirement
Ground contamination	– Where possible refuelling will be undertaken in designated areas (impermeable surfaces with containment) with spill kits available; – Chemical and hydrocarbon management enforced on site; and – Good housekeeping.
Storage of fuels, oils, chemicals and other hazardous liquids	– Storage tanks/containers/bags will be suitable and labelled for the liquid/solid material being stored; – Bunds to be at least 110% of the largest container therein; and – Daily inspections of tanks.

7 BIODIVERSITY MANAGEMENT PROGRAMME

7.1 INTRODUCTION

Construction, operations on the ML and activities within any EPLs will include the removal of floral, displacement of fauna and disturbance of habitat, ecosystems and ecological function. It is therefore vital to ensure that all management, monitoring and mitigation actions are adhered to in order to manage and minimise environmental impacts and any potential pollution that could further impact the receiving environment.

7.2 OBJECTIVES

The ESMP objectives are to minimise negative direct effects of the construction and operations on the receiving environment. These objectives are:

- Mitigation and monitoring;
- Avoid compromising future exploitation of resources by managing impacts and mitigating or minimising these impacts;
- Establish and maintain an information base that will assist in evaluating the cumulative impacts of the operations and establish recovery rates of biodiversity impacted during the mining operations;
- Minimise potential interaction with fauna;
- Ensure the conservation of biodiversity where possible; and
- Offsetting as a last resort.

7.3 RESPONSIBILITIES

Workforce and all contractors
Required to take all reasonable measures to prevent the damage of flora and fauna and release of pollutants from the site into the receiving environment. Report any damage to fauna or flora to the HSE/ESG coordinator.

HSE/ESG coordinator
Will ensure that the objectives listed above are being met and provide performance feedback to the HSE/ESF and Project/General managers, in monthly and compliance reports.

7.4 BIODIVERSITY MANAGEMENT MEASURES

The biodiversity management plan measures are designed to minimise the damage to biodiversity on site. This will be updated once the findings of the ESIA biodiversity assessment are complete. Operations activities that could potentially damage protected and endangered species include:

- Chemical spills;
- Refueling;

- Stockpiling;
- Traffic activities; and
- Clearing land.

Table 5 below shows the environmental aspects and impacts, and mitigation and monitoring measures for biodiversity aspects.

Table 5 - Biodiversity aspects

Responsibility	**HSE/ESG Manager**
Potential issues or impacts	– Possible injury or death of animals; – Poaching; – Habitat fragmentation from clearing, pitting, trenching and open pit mining; – Flora disturbance; – Loss of riparian vegetation; – Habitat loss from excessive clearing; and – Loss of protected/vulnerable species.
Mitigation measures	
General	– Ensure internal land clearing permits are applied for prior to land clearing and through this process the environmental team have the opportunity to recover or rescue plants of significance or plants that can be used for progressive rehabilitation; – Permits to be obtained from Directorate of Forestry; – Limit the development to actual sites to be mined and avoid affecting adjacent areas, especially ephemeral drainage lines; – Avoid development and associated infrastructure in sensitive areas – e.g., hills and drainage lines (ephemeral rivers/streams) in the immediate area. This would minimise the negative effect on the local environment, especially unique features serving as habitat to various vertebrate fauna species; – Minimise areas cleared by ensuring that an early works construction plan or a construction management plan is in place and conveyed to contractors; – All workers on-site are to be notified to avoid any excluded areas or species; – Identify rare, endemic, endangered, threatened and protected species and demarcate them and avoid cutting them down, trampling them, or removing them, where possible; – Remove (e.g., capture) unique fauna and sensitive fauna, as well as slow moving species such as tortoise and chameleon, before commencing with the development activities, as well as during the operational phase,

Responsibility	HSE/ESG Manager
	and or species serendipitously located during this period and relocate to a less sensitive/ disturbed sites in the immediate area; – Remove unique, sensitive flora and protected plant species before commencing with the development activities and where possible relocating to less sensitive/disturbed sites in the immediate area if disturbance cannot be avoided; – Prevent and stop the setting of snares (poaching), illegal collecting of veld foods (e.g., tortoises, etc.), indiscriminate killing of perceived dangerous species (e.g., snakes, etc.) and collecting of wood as this would diminish and negatively affect the local fauna; – Prevent and stop the collecting of firewood as dead wood has an important ecological role; – Such collecting of firewood, especially for economic reasons, often leads to abuses – e.g., chopping down of live and or protected tree species such as *Acacia erioloba*, *Combretum imberbe*, etc. which are good quality wood; – Attempt to avoid the removal of bigger trees during the development phase(s) – especially with the development of access routes – as these serve as habitat for a myriad of fauna; – Avoid the destruction of larger trees associated with the ephemeral drainage lines; – Avoid trees with raptor nests (especially white-backed vulture) as these bird numbers are declining dramatically throughout their range and are classified as critically endangered by the IUCN (2020); – Prevent and stop fires, as this could easily cause runaway veld fires affecting both the local fauna and flora (e.g., loss of grazing and domestic stock mortalities, etc.) for the neighbouring farmers; – Ensure site has adequate fire breaks – Ban domestic pets – e.g., cats, dogs, chickens etc. – on site at all times as cats decimate the local fauna and interbreed and transmit diseases to the indigenous African wildcat. The killing of the local fauna by such pets should be avoided at all costs; – Prevent the planting of potentially invasive alien plant species for ornamental purposes or as part of the landscaping. Alien species often "escape" and become invasive causing further ecological damage as is evident from previous human habitation in the area; – Make an effort to eradicate/destroy invasive alien plants encountered on site. This would ensure that the spread is limited and show environmental commitment; – Incorporate indigenous vegetation, especially protected species, into the overall landscaping. Indigenous species require less water and overall maintenance;

Responsibility	HSE/ESG Manager
	– Include large/old tree specimens as part of the landscaping; – Initiate a suitable waste removal system as waste often attracts wildlife, (e.g., baboons and black-backed jackal, crows, etc.) which may result in human-wildlife conflict issues; – Educate/inform contractors and staff on protected species to avoid and the consequences of illegal collection of such species; – No animals or birds may be collected, caught, consumed or removed from the site by any contractor or personnel on site; – No poaching; – Ensure all trenches are backfilled upon completion and when open clearly marked and with protective berms or fencing to prevent access; – Progressive rehabilitation during the mining phase should be used as soon as possible and continue throughout the operating phase; – Rehabilitation of the disturbed areas, i.e., initial development access route "scars" and associated tracks as well as associated mining/prospecting infrastructures, should be rehabilitated as soon as their use is complete, otherwise access needs to be restricted. Such rehabilitation would not only confirm the company's environmental integrity, but also show true local commitment to the environment; – Natural drainage patterns should be restored where possible; and – Investigate the idea of employing an Environmental Officer during the construction phase(s) to ensure compliance and minimise the overall impact on the flora and the environment.
Tracks	– Other than designed and approved works, avoid placing access routes (roads and tracks) through sensitive areas, e.g., over hills and along drainage lines within ephemeral (intermittent) streams and rivers. This will minimise the effect on localised potentially sensitive flora and habitats in the area; – Route new tracks around established and protected trees, and clumps of vegetation, where possible; – In undisturbed areas, especially offsite, avoid driving randomly through the area (i.e., "track discipline"), but rather stick to permanently placed roads/tracks – especially during the construction phase. This will minimise the effect on localised potentially sensitive flora and habitats in the area; – Avoid having to create new tracks for ongoing maintenance and inspections; – Stick to speed limits that are established to result in fewer faunal road mortalities as well as less dust pollution. Speed humps could also be used to ensure the speed limit;

Responsibility	HSE/ESG Manager
	– Implement erosion control. Avoid constructing tracks up steep gradients (where runoff can deeply incise the slope and erode the road); – Incorporate erosion furrows (runoff sites) and humps along tracks to channel water off the tracks to minimise erosion problems; – Cross drainage lines at right angles, etc.; – The area(s) towards and adjacent to drainage line(s) are easily eroded, and further development may exacerbate this problem; and – Avoid construction within 100 m of the main drainage line(s) (ephemeral streams) to minimise erosion problems as well as preserving the riparian associated flora and fauna.
Access route	– Revegetate access routes upon completion of installation of associated infrastructure where possible.
WRD	– Terrace the waste rock dumps and cover with soil to facilitate stabilisation and rehabilitation.
Monitoring requirements	
– Daily visual inspection during construction of new access tracks/widening, land clearing areas; – Daily visual inspection of dams, river diversion for fauna that may have become entrapped; – Clearing fire breaks on a regular basis, especially prior to the windier months; – Regular checking of rehabilitation areas to ensure that the vegetation is flourishing and not dying; – Biodiversity monitoring should be undertaken in line with monitoring programme requirements. This program will include, but is not limited to, monitoring of the condition of habitats, ecosystems, topsoil stockpiles, species inventory and alien vegetation control; and – Vegetation clearing permits are valid and on file.	

8 SURFACE AND GROUNDWATER MANAGEMENT PROGRAMME

8.1 INTRODUCTION

Chemical/hydrocarbon and waste spills (solid/liquid) must be contained, so as not to contaminate the soil or groundwater. Any contact with groundwater must be treated with exceptional care and reported immediately to minimise the potential for contamination of an aquifer. It is important to limit the potential for wastewater seepage to groundwater.

This surface and groundwater management plan outlines appropriate surface and groundwater water management measures, monitoring programmes and reporting procedures to be implemented.

8.2 OBJECTIVES

This surface and groundwater management plan has been prepared to minimise potential impacts on surface and groundwater resulting from construction, operations and exploration activities. It is important to report any contact with, or contamination of, groundwater to the HSE/ESG coordinator or relevant department line manager as soon as possible.

8.3 RESPONSIBILITIES

Workforce and all contractors
Required to take all reasonable measures to prevent the discharge of sediments and pollutants from the site towards surface and groundwater sources. Report any contact with surface water (stormwater runoff, streams or ponds) and groundwater to the HSE/ESG coordinator.

HSE/ESG coordinator
Will ensure that the objectives listed above are being met and provide performance feedback to the HSE/ESG manager.

8.4 SURFACE AND GROUNDWATER MANAGEMENT MEASURES

The surface and groundwater management plan (table 6) measures are designed to minimise the runoff of sediment-laden or polluted water/effluent into the surrounding environment. Operational activities that could potentially alter natural surface water and groundwater quality include:

- Leaks in the heap leach pads, processing storage tanks and other chemical and related system breaches, leaks and spills;
- Refuelling activities (bulk and in field);
- Seepage of wastewater into groundwater;

- Overflowing and/or leaking bunded area;
- Open pit mining operations;
- Exploration drilling activities; and
- Poor resource stewardship practices.

The following requirements are to be met to ensure that groundwater is not contaminated:

- Fuel/oil and chemicals must be safely stored and removed; and
- Any contact with surface or groundwater must be treated with exceptional care and reported immediately, to minimise the potential for contamination of an aquifer.

Table 6 – Water quality mitigation measures

Responsibility	– Project/General manager – Mining manager – Processing manager – Maintenance manager – Employees
Potential issues or impacts	– Groundwater contamination due to incidental hydrocarbon spills; – Change in the water table and quality; and – Water contamination due to leaks, effluent or acid mine drainage (AMD).
Mitigation measures	
Protection of ground water	– Where the water table is penetrated by drilling and the water flows out onto the surface, a furrow needs to be dug that diverts the water to vegetation. This can only be done for clean (non-contact) water; – All boreholes should be capped and labelled; – Water saving measures shall be applicable at all times. No taps or pipes left to run, leaks to be detected immediately. Light duty vehicles to be washed in designate wash bays with water recycle systems, as well as silt traps and oil/water separators; and – Maintenance areas and workshops must have sealed floors and sumps and drains and effective, well-maintained oil/water separators.
Sewage and grey water from temporary toilets on site	– Use of the portable chemical toilets instead of the veld must be strictly adhered to; and – If grey water can be collected from washing facilities, such as sinks and showers, not including toilets, once tested, it should be recycled and: o Used for dust suppression. o Used to clean equipment

Lowering of the groundwater table	– To maximise the re-use of water during the construction and operational phases to minimise the use of clean water, no matter the source. – Extraction volumes of water shall be minimal during mining, with onsite processing and activities making use of reclaimed mine sump, runoff, and recirculated process waters to the maximum extent possible, with supplemental use of external water sources; – Use water effectively and efficiently by following the reduce-recycle-reuse approach; – Record volumes of abstraction and supply; and – A site wide water balance will be kept and updated on a regular basis by the Processing manager.
Inefficient use of water resources	– To ensure compliance with all legal obligations; – All plant and surface infrastructure (including the waste rock dumps/tailings storage facilities) to be designed and constructed according to national standards and applicable legislative requirements, to prevent surface water and groundwater contamination; – Ensure erosion control and prevention measures are in place; – Ensure laydown areas or maintenance workshops are located outside of stormwater catchment areas; – Installation of diversion structures to divert non-contact surface water away and around the mining operations; – Refueling shall be undertaken in a designated area, where possible; – All vehicles and machinery must have drip trays to collect leakages of lubricants and oil during any field repairs or emergency maintenance; – In the event of pollution, polluted material must be collected and disposed of at an approved site; and – A 'good housekeeping' policy shall be adopted across the mining area.
Blasting could penetrate the groundwater table	– Dewatering of the mine may be necessary; if suitable this water can either be used in the processing plant or pumped into drainage lines of the catchment downstream of the infrastructure (non-contact water); – The impact of mining and any dewatering on the surrounding aquifers will be monitored and reported on; and

	– Should there be a reduction of the cone as a direct result of dewatering from the mine, then an alternative source of water may need to be identified for the affected users, if any.
Any hazardous fluid or lubricating chemicals used could enter the aquifer or surface water environment causing pollution	– Hazardous waste disposal facilities need to be approved by the MEFT prior to construction and / or meet industry standards to prevent pollution events from occurring; – Temporary waste disposal facilities will be provided for the collection of waste, which will be removed regularly to the permitted waste disposal site; – Chemical and hydrocarbon spillages from trucks, conveyors and pipelines will be cleaned up timeously to prevent contamination; – Water in the pollution control ponds will be used for road watering for dust suppression, make up water where possible, as industrial water or for construction; – The contractors' laydown and maintenance workshops areas will drain to a sump with silt traps and hydrocarbon collectors; – All chemicals, bulk fuels, oils and grease and any other hazardous substance, will be stored and handled as per all applicable legislation and national standards; – Portable chemical toilets will be provided during the construction and exploration phases. They will be routinely cleaned, and sewage disposed of at a licensed sewage treatment plant with the safe disposal certificate to be provided; – A sewage plant may be provided for during the operational phase and the treated water will either need to be contained in evaporation ponds and will be recycled or if treated water is of the correct standard as per the general standards of article 21 of the Water Act, No. 54 of 1956, after testing the water quality, it can be flushed into the catchment's water courses; – Pollution control ponds will be constructed downslope of the mine and plant site to capture all dirty water run-off; – Silt traps will be constructed upslope of the pollution control ponds and return water pond; – The pollution control facilities (pollution control ponds, silt traps and return water pond) will be placed on planned maintenance, routine inspections will be implemented, and they will be de-silted periodically to ensure effective performance; – Silt will be tested and disposed of on the waste rock dumps, if of a good quality;

Reduction of surface flow downstream of the weir / flood attenuation pond upstream of the mine pit	– Minimise the impact on the catchment yield be diverted around the open pit and direct any clean runoff from the mine infrastructure into the same catchment; – Contain contaminated water within mining infrastructure sites using berms and direct to sumps for separation and recycling; – Construct stormwater diversion berms around infrastructure to divert clean water around and away from these sites; – Keep clean and dirty water separate; – Minimise water consumption from external sources and recycle as much water as possible; and – Minimise the risk of discharging contaminated water.
Manage surface water recharge into catchment	– Construct the diversion weir or flood attenuation pond wall upstream of the open pit in accordance with engineering specifications to divert 1 in 50/100/200-year [to be confirmed and updated in the revised ESMP] floods at a safe inflow and out flow rate ensuring the freeboard is sufficient for such flooding; – The design of the diversion weir / flood attenuation pond wall should be such that allows optimum water to flow along the water course downstream of the structures so that the riverine ecosystem can maintain reasonable functioning; – To prevent contamination of the watercourses; and – To ensure that there is continuous, on-going maintenance and monitoring of the condition of the clean and dirty water system, its effectiveness and the water qualities in and around the site.
Monitoring requirements	
– Records borehole water level measurements, this should commence before operations to ensure a baseline is acquired and throughout life of mine, including post mine closure, as identified in line with the mine closure plan; – Maintain records for LOM; – Report on trends on a monthly basis; and – Monitor the use of water and keep records of requirements.	

8.5 SURFACE AND GROUNDWATER QUALITY MONITORING

Every effort must be made throughout the LOM to preserve the quality of surface water and groundwater sources that the Proponent may impact and within the Proponent's mining licence and EPLs. Containment of waste and chemicals and the correct disposal thereof must be compliant and to good international industry practices and standards. Personnel must report any unusual conditions and intersection with surface and groundwater immediately to the HSE/ESG coordinator.

The Department of Water Affairs require quarterly reporting for water quality of water from the sources for which a permit was required, namely, for abstraction permits and discharge permits, which must include:

1. Daily and weekly observations for any leakages;
2. Maintain a record of all abstracted volumes and report to DWA / MAWLR as per permit conditions;
3. Install water flow meters if required;
4. Maintain a monthly water balance;
5. Submit quarterly water quality tests for water and monitoring boreholes, effluent discharge points and any surface water bodies; and
6. Monitor the integrity of the weir / pond wall in accord with the frequency laid down by engineers who designed the structures.

9 WASTE MANAGEMENT PROGRAMME

9.1 INTRODUCTION

The construction, operational and exploration activities will generate both solid and liquid waste. The types of waste generated at the facility are classified as mineral and non-mineralised waste. All non-mineralised waste, if no onsite approved facility/landfill is in place, will be removed from the mine site and will either be disposed of at the Windhoek landfill site (non-hazardous waste e.g., household or garden waste), recycling facility (e.g., Rent-a-Drum) or the Windhoek hazardous waste disposal site. Mineralised and non-mineralised waste rock from mining operations is deposited on the waste rock dump (WRD), and spent leach material, or ripios, is stored in a dedicated and approved ripios storage facility.

9.2 OBJECTIVES

This waste management programme has been prepared to ensure the proper storage, transport, treatment and disposal of waste and where possible will follow the waste hierarchy, which encourages waste avoidance and waste reduction followed by reuse, recycling and reclamation, before waste treatment and waste disposal.

9.3 ROLES AND RESPONSIBILITIES

Workforce, contractors, suppliers and visitors

- Required to ensure that all waste generated during construction, operational and exploration activities is removed and disposed of accordingly, as per the required procedures, including providing evidence in the form of waste transfer receipts for the waste moved off site;
- Ensure no onsite windblown rubbish pollutes the environment; and
- Remove waste on a regular basis to prevent vermin.

Department line managers and HSE/ESG coordinator

- Required to inspect receipts and evidence of correct waste handling; and
- Review waste management practices regularly during onsite and exploration operational activities on site.

9.4 SOLID AND LIQUID NON-MINERALISED WASTE

The mine site will set up a form of recycling system, thus reducing its impacts associated with solid waste generation. Where possible the Proponent will implement measures to reduce, reuse and recycle waste generated as part of the operations of the mine. In order to achieve this a temporary waste storage facility will be required.

Waste will be controlled through prevention and mitigation measures as follows:

- Reduce, reuse and recycle where possible;
- Storage of domestic waste on site may result in the attraction of unwanted scavengers and should be disposed of at a licensed site as soon as is feasible;
- Hydrocarbon and chemical contaminated solids have the potential to cause contamination to the soil, groundwater and/or surface water, thus correct storage and disposal methods are required. Some of these materials can be recycled or used by other facilities; and
- Contract if required, an onsite licensed waste management contractor.

Table 7 shows the waste mitigation measures and monitoring for waste.

Table 7 - Waste mitigation measures

Responsibility	– Project/General manager – Contractor site manager – Operational department line managers – Mineral resources manager – Employees
Potential issues or impacts	– Soil, surface water and ground water contamination due to spillage; – Land and water pollution; – Loss of biodiversity; and – Infectious diseases.
Mitigation measures	
Waste management plan	– The Proponent should compile a Waste management plan that should address as a minimum the mitigation measures included below.
Hazardous waste	All construction, operational and exploration vehicles (4x4 vehicles and trucks) and equipment on site should be provided with a drip tray/ or oil spill kit: o Drip trays and sealable containers are to be transported with vehicles wherever they go o Drip trays should be cleaned after use, and spillage handled, stored, and disposed of as hazardous waste o Contractor vehicles and support equipment should be authorised for use onsite prior to accessing the site. The vehicle either must have a drip tray or must be inspected as part of the authorization and prior to its entry on site each time; – All vehicles should be maintained regularly to prevent oil leakages; – Maintenance of vehicles must be completed within designated workshops and is not permitted to occur on site or in the field as far as reasonably possible. In instances when emergency field maintenance is required, measures need to be put in place to avoid hydrocarbon spillages;

	– Maintenance and washing of mining vehicles should be conducted at a suitable site/facility which adhere to the following: o The work area/facility should be lined to be impermeable; o The work area/facility should have an oil-water separator (oil trap) to collect any run-off from the washing and or maintenance activities or be equipped with an oil and water separation system; – Spilled oil or fuel should be treated as hazardous waste, disposed of as it occurs in the appropriate hazardous waste containers (sealable drums) on site, and removed off site monthly, or as required depending on volumes, to the closest licensed hazardous waste disposal site in the vicinity; – All such waste should be provided to specialists in the handing and treatment of such materials; and – All hazardous substances (e.g., fuel, grease, oil, drilling fluids etc.) or chemicals should be stored in a specific location at the mine site on an impermeable surface which is bunded and facilities should be leads that can seal and are baboon proof.
General waste	– The site and exploration areas should be kept tidy at all times. – All domestic and general waste produced daily should be contained: – No waste may be buried or burned without a permit to do so or unless done so at a designated waste disposal site; – No waste is to be left uncontained, in suitable containers, overnight; – Waste containers (bins) should be emptied regularly and removed from site to the nearest official licensed waste disposal site, or to onsite approved landfill, if sought by the Proponent and approved by MEFT; – All recyclable waste needs to be taken to the nearest recycling depot if available; – Enough separate waste containers (bins) for hazardous and domestic/general waste must be provided on site. These should be clearly marked; and – Mining personnel should be sensitised to dispose of waste in a responsible manner and not to litter.
Residual mineral samples	– Infill or other exploration or definition drilling within the mine licence and exclusive prospecting licences will produce core or drill chips. The core and samples that will not be used for further analysis, or submitted to MME, should be taken off site or used (with the required permission from the affected landowner and/or

	tenant) to repair any possible damaged roads, only after comprehensive geochemical testing and conclusive characterization; – Chip samples can be disposed of in the WRD, or if potentially acid generating, within the ripios storage facility; and – No samples are to be dumped at site or in the vicinity of the site as to not affect rehabilitation efficiency through physical and chemical pollution of weathering samples.
Littering and environmental contamination from waste	– No littering by workers shall be allowed; – All litter on and around the site must be picked up and placed in the bins provided; – The site should be kept tidy and free of litter at all times; – All domestic and general waste produced should be cleaned and contained as produced (as an integral part of the work order/task); – No solid waste landfill will be established at the site without proper approval from authorities; – No waste shall be burned or buried anywhere unless permitted to do so in an approved onsite landfill; – Waste shall be collected and shall be removed regularly to avoid bad odours; and – Hazardous and non-hazardous waste shall be stored separately at all times.
Environmental contamination from liquid waste	– Hydrocarbon and chemical liquid waste must be stored correctly and disposed of by registered companies; – Evaporation ponds can be utilised for temporary storage requirements; and – Safe disposal certificates must be kept and provided to the HSE/ESG manager on request.
Monitoring requirements	
– Monitor whether the provisions set out in this ESMP concerning waste management is being applied as per instructions; – All non-compliances should be recorded and discussed at weekly site meetings and timeous remedial actions taken; and – All guilty parties that are in contravention of the provisions set out for managing waste should be warned and penalised, and in the event of repeat offenses dismissed, according to the severity of the impact appropriate steps taken.	

9.5 WASTE DISPOSAL MONITORING

Certificates providing the safe disposal of waste from a permitted hazardous waste disposal site must be provided to the department line manager or HSE/ESG manager upon request.

10 SPILL MANAGEMENT PROGRAMME

10.1 INTRODUCTION

The uncontrolled release of fuels and other hydrocarbons and chemicals has the potential to result in the contamination of soil, groundwater and surface water, which may lead to serious environmental harm. Spills can impact on fauna and flora in the surrounding area and degrade or destroy habitat, ecosystems and ecological function. On this basis, the storage handling and use of fuels or other hydrocarbons and chemicals must be managed to minimise the risk of a release, and measures must be in place to promptly prevent and minimise potential impacts should a release occur.

10.2 OBJECTIVES

This spill management plan has been prepared to minimise the potential for the uncontrolled release of fuels, oils and other hydrocarbons and chemicals. Preventative measures to minimise the potential for a spill are listed. Should a spill occur, this plan provides guidance for the Proponent on the appropriate spill response measures.

10.3 ROLES AND RESPONSIBILITIES

Workforce and all contractors
Required to implement the spill prevention and response measures listed below.

Department line managers/HSE/ESG coordinator
Required to ensure that appropriate spill prevention measures (listed below) are implemented and that any spills have been appropriately managed and reported.

10.4 SPILL PREVENTION MEASURES

The following management measures are to be implemented by the Proponent:

- Spill kits are to be made available throughout the site. The kits are to include, as a minimum, the following items:
    - Absorbent materials;
    - Shovels;
    - Heavy-duty plastic bags; and
    - Protective clothing (e.g., gloves and overalls).

- Major servicing of equipment shall be undertaken in appropriately equipped workshops,
- Provision of adequate and frequent training on spill management, spill response and refuelling must be provided to all onsite staff and contractors;

- Fuels, lubricants and chemicals are to be stored within appropriately sized, impermeable bunds or trays with a capacity not less than 110% of the total volume of products stored;
- All fuel and chemical storage and handling equipment (including transfer hoses, etc.) shall be well maintained;
- Storage and handling of fuels and chemicals shall follow relevant legislation and regulations;
- No refuelling is to take place within 50 metres of groundwater boreholes, surface water or streams; and
- Material Safety Data Sheets (MSDS(s)) and Safety Data Sheets (SDSs) are to be kept for each chemical used on site. These must be easily accessible to all personnel.

10.5 SPILL RESPONSE MEASURES

The primary concern, in the event of any spill, is the health and safety of any residents/ employees and contractors in the vicinity. Of highly significant importance, is the protection of water sources, ecosystems, fauna, then soil and vegetation.

The following points therefore apply to all areas on the site:

- Assess the situation for potential hazards;
- Do not come into contact with the spilled substance until it has been identified and characterised and necessary personal protective equipment (PPE) is provided;
- Isolate the area as required; and
- Notify the HSE/ESG manager or HSE/ESG coordinator.

The following measures are to be implemented in response to a spill:

- Spills are to be stopped at source as soon as possible (e.g., close valve or upright drum);
- Spilt material is to be contained to the smallest area possible using a combination of absorbent material, earthen bunds or other containment methods;
- Spilt material is to be recovered as soon as possible using appropriate equipment. In most cases, it will be necessary to excavate the underlying soils until clean soils are encountered;
- All contaminated materials recovered after a spill, including soils, absorbent pads and sawdust, are to be disposed to appropriately licensed facilities.
- Soils may be rehabilitated in an approved manner, such as *in situ* or at an onsite approved and effective bioremediation site;
- The department line manager or HSE/ESG coordinator are to be informed as soon as possible in the event of a spill; and
- A written incident report must be submitted to the department line manager.

Table 8 shows the spill mitigation measures.

Table 8 – Spill mitigation measures

Responsibility	– Department line managers – Project manager – Contractor site manager – Employees
Potential issues or impacts	– Soil, surface water and ground water contamination due to spillage; – Hydrocarbon and chemical handling and storage can cause spillages that lead to groundwater contamination and soil contamination; and – Death and/or injury to fauna and flora, loss of biodiversity.
Mitigation measures	
Stored hazardous chemicals	– Hazardous chemicals/hydrocarbons are to be stored in bunded areas, that are impermeable and can contain 110% of the largest volume contained therein; – Hydrocarbons (such as fuels) are to be handled over areas provided with impervious surfaces; – Spills of hazardous chemicals/hydrocarbons are to be contained and cleaned-up to ensure protection of the environment; and – All the necessary PPE required for the safe handling and use of petrochemicals, hydrocarbons and chemical materials.
Machinery and equipment maintenance	– Major servicing of equipment shall occur in appropriately equipped workshops when possible; – Ensure spill kits are available where machinery have to be serviced on site. – Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks; and – All the necessary PPE required for maintenance activities must be issued to staff whose duty it is to manage and maintain the machinery and equipment.
Safe delivery and handling	– Training employees and toolbox talks; – Good housekeeping across the site; – Fuel and chemicals/hydrocarbons are handled with care; – Spill kits to be at designated areas across the site and on any EPLs or available for use during refuelling, fuel/chemical delivery, or use. Absorption material should be available and at hand. Where sawdust is used it should be cleaned up immediately and not left for long periods as this poses a fire hazard; – Any major spill is reported once containment has been achieved; – Plant and equipment to be well maintained and serviced regularly; and

	– Diesel bowsers to be used for infield refuelling where required for operational activities and on any EPLs. All refuelling nozzles are to be leak proof and a drip tray used during refuelling. Diesel bowsers to have an appropriate spill kit available for the volume of fuel contained in the bowser.
Storage	– All tanks to be stored on a non-porous floor and within a bunded area; – Bund to be capable of storing at least 110% of the volume of the largest tank; – All containers to be suitable for use and not damaged; – Tanks are locked at all times; – Spill kits available at storage locations and around the site at suitable locations; and – Relevant permits to be in place for storage of fuel (diesel and petrol).
Refuelling	– Drip tray to be used during refuelling of vehicles when not on an impermeable surface; and – Decanting is prohibited.
Rehabilitation	– Contaminated materials should be removed and disposed of at an authorised hazardous waste disposal facility (Windhoek). If the Proponent obtains approval for an onsite bioremediation facility, then the contaminated soils must be deposited on lined storage areas, within the bioremediation facility, for rehabilitation purposes. Rehabilitation can take place naturally by adding water, air and fertiliser. The process can be accelerated by using special additives that will breakdown the hydrocarbons. Once rehabilitated and characterised as safe/compliant, the soils can be used for revegetating WRD slopes. Contaminated sorbents and materials other than soils must be disposed of at an authorised hazardous waste site; and – Large spills can first be treated *in situ,* where required.
Monitoring requirements	
– Daily observations when fuels/chemicals are delivered and handled – Competent operator to operate refuelling equipment – Supervision during refuelling – Weekly observations monitor containment and storage – Monitor the level of hydrocarbons in contaminated soils after a year of rehabilitation – Monitor each year until the soils are ready for re-use in revegetation Projects	

For large-scale fuel spills (≥ 200 L), and other significant environmental incidents, the fire services should be contacted as required and the office of the Ministry of Mines and Energy,

Ministry of Agriculture, Water and Land Reform and the Ministry of Environment, Forestry and Tourism (MEFT) informed of the incident immediately. Formal reports to be issued within 24 – 48 hours of the incident occurring all correspondence with authorities should be undertaken by the Project/General manager in consultation with the CEO or their designate.

For the clean-up of smaller spills, the relevant MSDS or SDSs should be consulted to determine the appropriate clean-up procedure. Basic spill response training will be provided as part of the site environmental induction, spill response equipment, including relevant MSDS copies, will be provided in areas where potentially environmentally hazardous chemicals may be used.

10.6 SPILL REPORTING

All major petroleum product spills (200 l) should be reported to the Ministry of Mines and Energy (MME) on Form PP/11 titled "Reporting of major petroleum product spill", issued by the ministry.

10.7 REHABILITATION OF CONTAMINATED SOILS

All soils that are contaminated with chemicals and or hydrocarbons should be taken to the rehabilitation area or treated *in situ*, if the site has an authorised storage/disposal (Project permitted for onsite bioremediation) area or removed to an authorised waste disposal facility. A procedural manual for rehabilitating contaminated soils on site should be developed. As noted, if rehabilitation is not permitted to be conducted on site, then the contaminated materials are to be removed off site to the licensed Windhoek hazardous waste facility.

11 AIR QUALITY MANAGEMENT PROGRAMME

11.1 INTRODUCTION

This air quality management plan describes the strategies and procedures that will be implemented to ensure that the health and comfort of employees, contractors, suppliers, visitors and nearby sensitive receptors (namely farmers) are protected from elevated concentrations of airborne dust and other gaseous emissions (e.g., oxides of nitrogen; nitrogen dioxide, particulate matter; sulphur dioxide and carbon monoxide). Typically, the gases present in a mining, solvent extraction/electrowinning (SX-EW) facility, its acid plant and exploration environment may include carbon monoxide, hydrogen sulphide, sulphur dioxide, methane, nitrogen dioxide and ammonia, among others. In cases where generators and other machinery are used, there will be some release of exhaust fumes, that will impact the immediate vicinity but will be of short duration.

11.2 OBJECTIVES

This air quality management plan has been prepared to prevent deterioration of air quality and to minimise the potential for emitted dust and airborne pollutants. Preventative measures are listed below.

11.3 RESPONSIBILITIES

Workforce and all contractors
To implement the necessary management practices and meet the objectives and requirements listed within this ESMP.

Department line managers/ HSE/ESG coordinator
To ensure that the objectives listed above are being met and to provide performance feedback to the mining manager.

11.4 AIR QUALITY MANAGEMENT PROCEDURES

Activities or areas that may potentially emit dust and airborne pollutants during construction, operations and exploration include the following:

- Blasting;
- Open pit mining;
- Earth moving equipment and vehicle movements;
- Unpaved roads;
- Drilling activities;
- Conveyors and crushers;

- Material handling points;
- Stockpiles;
- Tailings and waste rock facilities;
- Concrete batching facilities; and
- Machinery operations.

Open pit mining, processing, construction and exploration activities can contribute to ambient noise and vibration, affecting neighbours.

11.5 AIR QUALITY MONITORING

Visual monitoring of operational activities can ensure the minimum discharge of airborne dust and other emissions according to the air quality management programme.

The Proponent will minimise the potential for dust generation and the emission of airborne pollutants by undertaking the following management measures (table 9), as required:

- Blasting will not take place on excessively windy days;
- Vehicle movements will be restricted to sealed/paved roads where possible;
- Appropriate speed limits will be set and enforced;
- Ground disturbance will be minimised as far as practical; and
- Vehicles and machinery will be maintained to limit exhaust fume emissions.

Table 9 – Air quality mitigation measures

Responsibility	– Department line managers – Contractor site manager
Potential issues or impacts	– Impaired visibility for drivers and employees; – Respiratory related health issues; – On-site mine laboratories without effective environmental controls, such as for furnace exhaust and fume hoods, or in cases where protective systems are poorly maintained, pose an environmental risk that can have impact on protected species, endemic species, their habitat, or people; – Solvent extraction/electrowinning (SX-EW) plant and related acid plant can produce sulphur dioxide, hydrogen sulphides, etc., and so sources need to be well covered with proper controls and workplaces properly ventilated with appropriate environmental controls on related ventilation exhausts;
Mitigation measures	

Dust and fumes	– Dust suppression measures must be implemented to reduce dust; – Vehicles must adhere to speed limits to avoid producing excessive dust; and – Vehicles and machinery are to be regularly serviced according to the manufacturers' specifications and kept in good working order to minimise exhaust emissions.
Dust generation can negatively impact occupational health and visibility	**Construction and closure phases**
	– Air quality impacts during construction would be reduced through basic control measures such as limiting the speed of haul trucks; limit unnecessary travelling of vehicles on untreated roads; and applying dust suppressants on regularly travelled, unpaved sections; – When haul trucks need to use public roads, the vehicles need to be cleaned of all mud and the material transported must be covered to minimise windblown dust; and – The access road to the Project site also needs to be kept clean to minimise carry-through of mud on to public roads.
	Operational and exploration phases
	– For the control of vehicle entrained dust a control efficiency (CE) target of as high as 90% on unpaved surface roads through the application of chemical surfactants is recommended, with water sprays on the in-pit haul roads to ensure a 50% CE; – In controlling dust from crushing and screening operations, it is recommended that water sprays be applied to keep the ore wet, to achieve a control efficiency of up to 50%; and – Mitigation of materials transfer points should be done using water sprays at the tip points. This should result in a 50% CE. Regular clean-up at loading points is recommended.
Laboratory exhaust and fumes	– All discharge stacks, exhaust chimneys, and fume hood exhaust stacks need to be fitted and installed with manufacturer approved/supplied environmental and health protective systems (scrubbers, filters, etc.). – Emissions control and related protective systems require regular inspection, testing and maintenance, by competent persons as per manufacturer specifications; and – Regular reporting of the performance of the inspection, testing, maintenance, and monitoring systems is required monthly. The report shall include the performance of the management system as well as the performance of the emission systems.
Monitoring requirements	

- Daily observations ; and
- Air quality monitoring:
  - A depositional dust fallout monitoring network will be increased based on the results of the existing baseline network of eight (8) dust fall units. The eventual construction and operations network will be maintained, and the monthly dust fall results used as indicators to tract the effectiveness of the applied mitigation measures. Dust fallout collection should follow the ASTM method
  - $PM_{2.5}$ and PM_{10} as well as passive gas monitoring will also be conducted.

11.6 ODOURS, NOISE AND VIBRATION IMPACTS

The sensitive receptors within proximity to the area are the surrounding farmers, drivers and potential tourists. Activities related to the construction, open pit mining, processing plant and exploration activities have the potential to generate nuisance odours, noise and vibration that can impact the quality of life for neighbouring residents and tourism activities. However, this potential impact is minimal due to the nature of the mining methods employed, mitigation measures are presented in table 10.

Table 10 - Noise mitigation measures

Responsibility	– Department line managers – Construction site manager
Potential issues or impacts	– Environmental noise evaluation criteria for residential, educational, and institutional receptors are potentially exceeded at nearby receptors due to the proposed Project operations.
Mitigations measures	
Excessive noise close to sensitive receptors	– Whenever possible, work hours for non-production heavy equipment and drilling should be restricted to between dawn and dusk where involving the use of heavy equipment, power tools, and the movement of heavy vehicles is within 500 m from sensitive receptors. Reversing, and the associated reverse alert, should be minimised at all times, but especially at night and by non-production equipment within 500 m from sensitive receptors. Affected stakeholders should be updated on the mitigation efforts during regular engagement meetings and updates; – All diesel-powered equipment and plant vehicles should be kept at a high level of maintenance. This should particularly include the regular inspection and, if necessary, replacement of intake and exhaust silencers. Any change in the noise emission characteristics of equipment should serve as trigger for withdrawing it for maintenance; – In managing noise specifically related to vehicle traffic, efforts should be directed at:

	○ Minimising individual vehicle engine, transmission, and body noise/vibration. This is achieved through the implementation of an equipment maintenance program to maintain road surfaces and regularly to repair potholes, etc. ○ Keep all roads well maintained ○ Avoid unnecessary equipment idling ○ All equipment and vehicles to be maintained as per the original equipment manual (OEM) ○ During nighttime, minimise the need for trucks/equipment to reverse, such as using roundabouts and scheduling ancillary equipment for daytime use as much as possible. This will reduce the frequency at which disturbing but necessary reverse warnings will occur – A noise complaints register must be kept; – As the site or activity is near noise-sensitive receptors (NSR), equipment and methods to be employed should be reviewed to ensure the quietest available technology is used. Equipment with lower sound power levels must be selected in such instances and vendors/contractors should be required to guarantee optimised equipment design noise levels; – As far as is practically possible, sources of significant noise should be enclosed. The extent of enclosure will depend on the nature of the machine and their ventilation requirements; – It should be noted that the effectiveness of partial enclosures and screens can be reduced if used incorrectly, e.g., noise should be directed into a partial enclosure and not out of it, there should not be any reflecting surfaces such as parked vehicles opposite the open end of noise reduction walls/padding/berms; – Equipment should be sited as far away from NSRs as possible. Also: ○ Machines used intermittently should be shut down between work periods or throttled down to a minimum and not left running unnecessarily. This will reduce noise and conserve energy ○ Plant or equipment from which noise generated is known to be particularly directional, should be orientated so that the noise is directed away from NSRs ○ Acoustic covers of engines should be kept closed when in use or idling ○ Doors to pump houses should always be kept closed ○ Construction materials such as beams should be lowered and not dropped – Regular and effective maintenance of equipment and plant are essential to noise control. Increases in equipment noise are often

	indicative of imminent mechanical failure. Also, sound reducing equipment/materials can lose effectiveness before failure and can be identified by visual inspection; – Noise generated by vibrating machinery and equipment with vibrating parts can be reduced using vibration isolation mountings or proper balancing. Noise generated by friction in conveyor rollers, etc. can be reduced by sufficient lubrication; – To the extent possible, high noise-level activities shall be minimised or avoided to reduce the noise levels reaching NSRs. Alternatively, and to the extent possible, the distance between source and receiver will be increased, or noise reduction screens, barriers or earthen berms shall be installed (as close to the noise source as possible); – When mobile equipment and activities are used, increasing the distance between source and receiver is often the most effective method of controlling noise since, for a typical point source at ground level, a 6-dB decrease can be achieved with every doubling in distance. It is however conceded that it might not always be possible, although should be employed at the design and planning stage of operations; – If noise control at the source and the use of distance between source and receiver is not possible, screening methods should be used. The effectiveness of a noise barrier is dependent on its length, effective height, and position relative to the source and receiver as well as material of construction. To optimise the effect of screening, screens should be located close to the source of the noise; – The careful placement of barriers such as screens or berms can significantly reduce noise impacts but may result in additional visual impacts. Although vegetation such as shrubs or trees may improve the visual impact of construction sites, it will not significantly reduce noise impacts and should not be considered as a control measure; and – Earth berms can be built to provide screening for large scale earth moving operations and can be landscaped to become permanent features once construction is completed. Care should be taken when constructing earth berms since it may become a significant source of dust.
Monitoring requirements	
– Sources of excessive noise will be investigated, and recommendations made for mitigation; – Keep complaints register; – Noise monitoring at sites where noise is an issue or may become an issue is essential. Annual noise sampling over a period of 10 to 30 minutes for day- and night-time at NSRs	

surrounding the Omitiomire Copper Project should be incorporated in a bi-annual environmental noise monitoring programme; and

- If noise related complaints are received, short term ambient noise measurements should be conducted as part of investigating the complaints. The results of the measurements should be used to inform any follow up interventions. The investigation of complaints should include an investigation into equipment or machinery that likely result or resulted in noise levels annoying to the community. This could be achieved with source noise measurements.

Notwithstanding the above point, the Proponent should continue to ensure potential odours, noise and vibration sources are mitigated through measures such as:

- Eliminate sources or noise and do not operate heavy equipment, whenever possible. Ensure appropriate measures are put in place to rectify odours, noise and vibration complaints, should they occur;
- Procedures for receiving complaints from nearby land users or residents to be in place and mitigation measures to be implemented should construction and mining generate excessive odours, noise and vibration, which is unexpected; and
- Exploration activities on any EPLs to be restricted to daytime hours, where possible.

Occupational noise and vibration are managed through the health and safety management plan and therefore not applicable to this ESMP.

12 SOIL MANAGEMENT PROGRAMME

Table 11 below shows the environmental aspects and impacts, and mitigation and monitoring measures for soil aspects.

Table 11 – Soil mitigation measures

Responsibility	– Mining manager – Contractor site manager –
Potential issues or impacts	– Construction, open pit mining and exploration can cause changes to soil and landscape; and – The land clearing activities by mechanical methods would result in erosion issues, especially with the proposed redirection of Black Nossob River.
Mitigations measures	
Changes to soil and landscape	– Topsoil should be separately stockpiled to be re-spread when backfilling, or for use in other site rehabilitation, such as waste rock dumps; – Topsoil depth varies but is characterised as the organic layer atop bedrock or other subsurface sands, silts, gravels or mixed mineral materials. Soil stockpiling, therefore, refers to preserving the top organic-rich layer, which may be from millimeters to decimeters in depth. Although some sand/gravel/silt contamination of the soil stockpiles is to be expected, soil stockpiles are not intended to include overburden. Overburden stockpiles should be separate from soil stockpiles; – Soils to be stored for longer than three years should preferably not be stockpiled in piles greater than 1.5 m in height; – Slopes of the stockpiles should be constructed to minimise the chances of erosion of the soils; – Topsoil stockpiles should be vegetated as soon as possible to prevent loss of the resource by wind and water erosion and to retain its micro-biological functions; – Monitor vegetation on soil stockpiles to prevent erosion and loss of topsoil; – Fertilise and vegetate soil stockpiles where required; – Equipment must be in good condition to ensure that lubricant/fuel spills do not contaminate the site; – Ensure soils are stockpiled separately from overburden (silt, sand, gravel and minerals materials) and are replaced in layers in which they were removed;

	– Disturbed or excavated areas should be backfilled with the soil material that was removed from it, shaped to free draining slopes and planted with sustainable grass/shrub/tree species; – The requirement of any open pits onsite is further detailed in the mine rehabilitation and closure plan; and – Ensure topsoil stockpiles are not positioned down gradient of potential contamination zones.
Land clearing	– Avoid clear felling of vegetation in areas viewed as erosion prone, i.e., ephemeral rivers; steep slopes (hill areas); – Reroute or limit the size of or avoid access route(s) in areas viewed as erosion prone, i.e. ephemeral rivers; steep slopes (hill areas); – Where new tracks have to be made off the main routes, the routes should be selected causing minimal damage to the environment, e.g. use the same tracks; cross drainage lines at right angles; avoid placing tracks within drainage lines; avoid collateral damage (i.e. select routes that do not require the unnecessary removal of trees/shrubs, especially protected species); – Rehabilitate all new tracks created as far as practically possible; – Construct permanent non-gravel or tar roads along vehicle route(s) most often used; – Rehabilitate eroded areas annually, i.e. after the rainy season (during winter months); – Implement and maintain erosion control measures where applicable, e.g., cross drains on slopes, etc.; – The option of diversion of the Black Nossob River should have the least impact on the general ecology/sensitive habitats and erosion prone areas; and – Ensure the continuous maintenance of the redirected Black Nossob River, i.e., after the rainy season (during winter months).

13 TRAFFIC MANAGEMENT PROGRAMME

Table 12 below shows the environmental aspects and impacts, and mitigation and monitoring measures for traffic aspects.

Table 12 - Traffic mitigation measures

Responsibility	– General manager
Potential issues or impacts	– Increased traffic volumes on existing roads; – Wear and tear of existing road surfaces; and – Road safety.
Mitigations measures	
Increased Traffic on road and vehicular accidents	– Designs of the intersection layouts of the mine access road must address design standards and elements such as alignment, sign distances, cross-sections and provisions for other road users including pedestrians, and must be legally compliant; – Inspect light duty site vehicles that travel offsite regularly, exploration vehicles and contractors' vehicles weekly for clean and operational taillights, indicators, reflective signage and reverse horns/beepers to ensure visibility of vehicles, especially at night; – The needs of pedestrians should be taken into consideration in the planning and design of the access to the proposed site, as well as the design of the road infrastructure; – All employees and contractors must adhere to the speed limits and other road safety procedures, both on the mine site, and on public roads. Include speed limits in the induction and enforce the speed limits; – Provide large visible road signage, indicating the presence of heavy vehicle traffic at least 500 m before, on either side of the mine site access road intersection along the road; and – Road safety issues must be included as part of the overall on-site safety training and at induction.
Monitoring requirements	
– Daily observations; and – Weekly checks.	

14 ARCHAEOLOGICAL MANAGEMENT PROGRAMME

14.1 INTRODUCTION

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, No. 27 of 2004), especially Section 55 (4): "a person who discovers any archaeological object must 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. Table 13 shows the archaeological and heritage mitigation measures for the Project.

Table 13 - Archaeological and heritage mitigation measures

Responsibility	– Mining manager – Project manager –
Potential issues or impacts	– Impact on heritage features
Mitigations measures	
Destruction of heritage sites and artifacts	In the unlikely event of a heritage site or archaeological site to be uncovered or discovered during either construction, mining or exploration phases of the Project, a "chance find" procedure should be applied in the order they appear below: – If operating machinery or equipment, stop work; – Demarcate the site with danger tape; – Determine GPS position if possible; – Report findings to foreman; – Report findings, site location and actions taken to superintendent; – Cease any works in immediate vicinity; – Visit the site and consult with any potentially affected community to determine whether work can proceed without damage to findings; – Determine and demarcate the exclusion boundary;

	– Site location and details to be added to the Project's geographic information system (GIS) for field confirmation by an archaeologist; – Inspect site and confirm addition to Project GIS; – Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and – Contact a certified professional to recover, package and label findings for transfer to the National Museum.
Monitoring requirements	
– Ensure workers are aware of and can make use of the chance find procedure.	

14.2 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 inspections.
Third party archaeologist - To inspect, identify, advise management, and recover remains.

14.3 PROCEDURE

Action by person identifying archaeological or heritage material:

a) If operating machinery or equipment stop work,

b) Identify the site with danger tape,

c) Determine GPS position if possible, and

d) Report findings to foreman.

Action by foreman:

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

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, and

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, and

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, and

d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.

15 IMPLEMENTATION OF ESMP

This environmental and social management plan:

A. Has been prepared according to a contract with the Proponent;

B. Has been prepared based on information provided to ECC up to July 2023;

C. Is for the sole use of the Proponent, for the sole purpose of an ESMP;

D. Must not be used (1) by any person other than the Proponent or (2) for a purpose other than an ESMP; and

E. Must not be copied without the prior written permission of ECC or Craton.

APPENDIX A - ENVIRONMENTAL ASPECTS AND ASSOCIATED IMPACTS, AND MITIGATION AND MONITORING MEASURES