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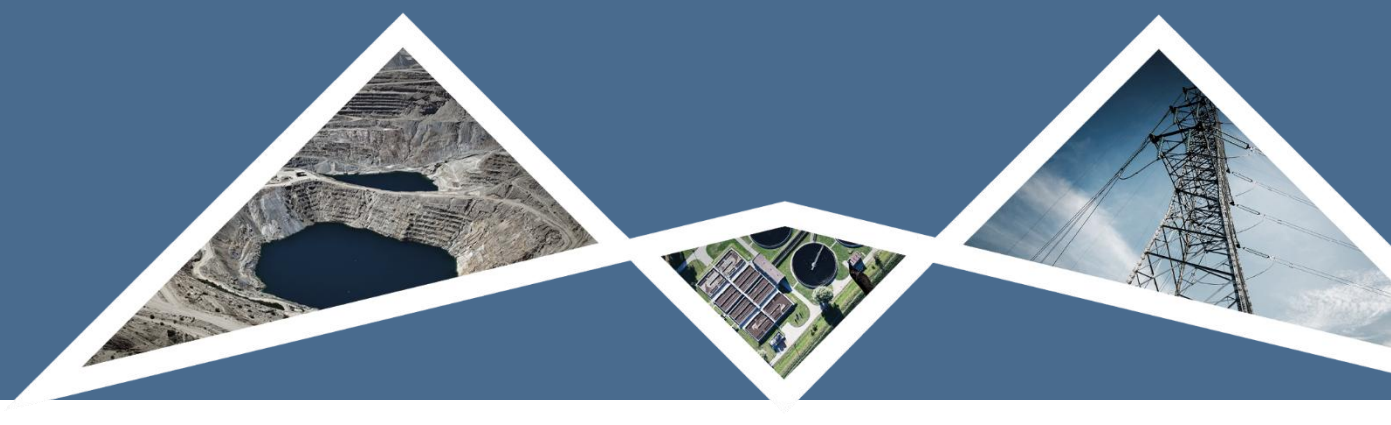
ENVIRONMENTAL MANAGEMENT PROGRAMME

CHAR TECHNOLOGY VCN FURNACE



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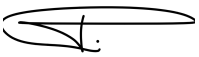
CHECKED:	Qaphela Magaqa		2026/02/12
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REVISION AND AMENDMENTS

REVISION DATE:	REV #	DESCRIPTION
2026/02/12	ORIGINAL DOCUMENT	Environmental Management Programme

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Definitions of key terms and abbreviations

Term	Definition
Applicant	According to NEMA, the applicant is a person who has submitted an application for an environmental authorization to the competent authority and has paid the prescribed fee. This EMPr utilizes this term to refer to the person who is ultimately issued with the EA or equivalent permission and who is ultimately responsible for compliance therewith and the associated EMPr.
CEO	Contractors environmental officer
CLF	Community Liaison Forum
DFFE	Department of Forestry Fisheries and the Environment
DPM	Developers project manager
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECO	Environmental control officer
EIA	Environmental Impact Assessment. In instances where a Basic Assessment process has been followed to obtain the EA, then EIA refers to the Basic Assessment process and associated Basic Assessment Report.
EIA Regulations	The Environmental Impact Assessment Regulations promulgated under the NEMA, GNR982, as amended.
EMPr	Environmental Management Programme
EPRP	Emergency Preparedness and Response Plan
GHG	Greenhouse Gases
IEA	Independent Environmental Auditor
Impact Management Outcomes	The specific, measurable result that must be achieved through the implementation of impact management actions to ensure that environmental impacts are avoided, minimized, or remedied (i.e. what needs to be achieved). These are the desired end states or results that must be achieved to manage, mitigate, or enhance environmental impacts identified. They describe what success looks like in terms of environmental performance (e.g., "No contamination of surface water resources during construction"). These outcomes are measurable and auditable, forming the basis for compliance monitoring and reporting.
Impact Management Actions	A specific measure or intervention implemented to avoid, manage, or mitigate a negative environmental impact, or to enhance a positive impact, during the planning, construction, operation, or decommissioning phases of a project (i.e. what needs to be done to achieve the outcome). These are the specific measures, tasks, or interventions that must be implemented to achieve the stated impact management outcomes. They detail how the outcomes will be achieved, including operational controls, procedures,

Term	Definition
	and responsibilities (e.g., "Install silt fences and sediment traps along drainage lines before earthworks commence")
NC	Non-compliance
NEMA	National Environmental Management Act (Act 107 of 1998)
PM	Airborne particulate matter
PPE	Personal Protective Equipment
SIA	Social Impact Assessment
SMP	Social Management Plan
TOPS	Threatened or protected species- listed under the National Environmental Management: Biodiversity Act (NEMBA), 2004, in terms of Sections 56 and 57. These species are categorized as: Critically Endangered, Endangered, Vulnerable, Protected.
WMP	Waste Management Plan.
WUL	Water Use Licence

1 INTRODUCTION

The Environmental Management Programme (EMPr) is an Integrated Environmental Management (IEM) Tool which typically is preceded by an Environmental Impact Assessment (EIA), and which aims to describe the objectives and management actions for managing and mitigating potential environmental impacts associated with a development proposal. Regulation 19 of the National Environmental Management Act (NEMA), EIA Regulations (GNR 982) requires the compilation and submission of an EMPr to the relevant Competent Authority together with the relevant Environmental Assessment Reports for consideration in the decision making on an Application for Environmental Authorisation (EA) for relevant Listed Activities.

The purpose of this EMPr is:

- to describe the impact management outcomes, including management statements;
- to identify the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development (planning and design, pre-construction, construction, post construction rehabilitation, and where relevant operation); and
- to provide a description of the relevant impact management actions which clearly defines what actions are to be taken, who is responsible for the actions, when such actions are to be undertaken, and how the implementation of such actions are to be monitored.

The ultimate objective of the EMPr is to ensure that undue or reasonably avoidable adverse impacts during the applicable phases of a development or activity are prevented, and that the positive benefits of the projects are enhanced.

This EMPr applies to the proposed **installation and operation of a Vanadium Carbon-Nitride (VCN) furnace** at the existing Char Technology facility, and addresses the **planning/design, refurbishment/installation works, and operational phase controls** relevant to the proposed change in process.

2 SCOPE OF THIS DOCUMENT

This EMPr applies to the development activity described in Section 5. The purpose of the EMPr is to give effect to precautionary and mitigatory measures, which are to be put in place for controlling the activities that take place during the project. The EMPr also provides guidance to assist in ensuring compliance with relevant national legislative and regulatory requirements.

The EMPr is a working document that should be updated on a regular basis, as and when necessary. Formal risk identification forms an integral part of EMPr management and assists with prioritizing and focusing the control of risks. The EMPr thus supports this on-going proactive mitigation and the duty of care to the environment. The EMPr shall therefore allow for risk minimization, rather than just ensuring legal compliance. The purpose of this EMPr is thus also to allow the user to make minor amendments to ensure continual revision and improvement of risk mitigation through the continual re-assessment of risks associated with the activity. Any amendments must comply with formal amendment processes as define in the NEMA EIA Regulations.

This EMPr covers:

- Minor refurbishment and upgrade of existing structures (within an existing industrial footprint), and limited civil works including paving of a short internal access road section and a loading bay.
- Assembly, installation, commissioning and operation of the proposed VCN furnace and associated infrastructure (including off-gas handling routed to a single stack).
- Environmental management controls for air emissions/dust, waste, hazardous substances/spills, stormwater protection, and incident/complaint management during relevant phases.

3 DOCUMENT STRUCTURE

The structure of this document is guided primarily by the requirements for the content of an EMPr as prescribed by Appendix 4 of the NEMA EIA Regulations. Consideration has also been given to the content and structure requirements as prescribed by other guidelines, as well as EIMS's professional judgement and experience. Table 1 provides an itemised breakdown of the NEMA EIA Regulations Appendix 4 requirements together with a cross reference to the relevant section of this EMPr where this requirement is addressed.

Table 1: EMPr Structure

Appendix 4 Reference	Description	Section in EMPr
Appendix 4(1)(1)(a)	Details of – (i) The EAP who prepared the EMPR; and (ii) The expertise of that EAP to prepare an EMPR, including a curriculum vitae;	4 Appendix 1
Appendix 4(1)(1)(b)	A detailed description of the aspects of the activity that are covered by the EMPR as identified by the project description.	5
Appendix 4(1)(1)(c)	A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	6 Figure 2
Appendix 4(1)(1)(d)	A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified though the environmental impact assessment process for all phases of the development including – (i) Planning and design; (ii) Pre-construction activities; (iii) Construction activities; (iv) rehabilitation of the environment after construction and in the case of a closure activity, closure; and (v) Where relevant, operation activities;	7
Appendix 4(1)(1)(f)	A description of proposed impact management actions, identifying the manner in which the impact management contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to – (i) Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) Comply with any prescribed environmental management standards or practices; and (iii) Comply with any applicable provisions of the act regarding closure, where applicable.	1
Appendix 4(1)(1)(g)	The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	9 1

Appendix 4 Reference	Description	Section in EMPr
Appendix 4(1)(1)(h)	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	9 1
Appendix 4(1)(1)(i)	An indication of the persons who will be responsible for the implementation of the impact management actions;	9 1
Appendix 4(1)(1)(j)	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	9 1
Appendix 4(1)(1)(k)	The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	9 1
Appendix 4(1)(1)(l)	A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	9
Appendix 4(1)(1)(m)	An environmental awareness plan describing the manner in which – (i) The applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment; and	8.10
Appendix 4(1)(1)(n)	Any specific information that may be required by the competent authority.	N/A

It is noted that this EMPr is the culmination of an Environmental Impact Assessment (EIA) specific to the development activities. This EMPr should be read in the context of this EIA. Where relevant the content of the EIA has been extracted and summarised for inclusion in this EMPr. The EIA provides further detail on the nature and extent of the development activities, the receiving environment, and the identified and assessed impacts.

4 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

In terms of Regulation 13 of the EIA Regulations, an independent Environmental Assessment Practitioner (EAP), must be appointed by the applicant to manage the application for EA. EIMS has been appointed by Char Technology (Pty) Ltd (the Applicant) as the EAP and is compliant with the definition of an EAP as defined in Regulations 1 and 13 of the EIA Regulations and Section 1 of the NEMA. This includes, inter alia, the requirement that EIMS is:

- Objective and independent;
- Has expertise in conducting EIA's;
- Comply with the NEMA, the Regulations and all other applicable legislation;
- Takes into account all relevant factors relating to the application; and
- Provides full disclosure to the applicant and the relevant environmental authority.

EIMS was appointed by the Applicant as the EAP to compile this report. EIMS is a private and independent environmental management-consulting firm that was founded in 1993. EIMS has in excess of 30 years' experience in conducting EIA's. The details of the EIMS consultants who compiled this EMPr are presented in Table 2 and copies of the EAP Curriculum Vitae are included in Appendix 1.

Table 2: EAP Details

Name of Practitioner	Qaphela Magaqa
Tel No.:	011 789-7170
E-mail:	qaphela@eims.co.za
Qualifications:	BSc Geography and Geology, BSc Hons GIS
Expertise of the EAP:	Mr Qaphela Magaqa is a Senior Environmental Consultant at Environmental Impact Management Services (EIMS) with five (5) years of professional experience in environmental management and related disciplines. He holds a Bachelor of Science Honours degree in Geographic Information Systems (GIS) (2019) and a Bachelor of Science degree in Geosciences (Geography and Geology) (2019), both obtained from Nelson Mandela University, Gqeberha (formerly Port Elizabeth), South Campus. Mr Magaqa is a registered Environmental Assessment Practitioner (EAP) with the Environmental Assessment Practitioners Association of South Africa (EAPASA) and is also registered with the South African Council for Natural Scientific Professions (SACNASP) as a Certificated Natural Scientist. His professional expertise includes environmental management, GIS analysis and mapping, environmental research, waste management, environmental auditing, and technical reporting. Mr Magaqa has been involved in a wide range of projects, including but not limited to waste management and advisory services, GIS-based environmental analyses, environmental compliance monitoring, Water Use Licence (WUL) monitoring, Water Use Licence Applications (WULA), Environmental Authorisation (EA) applications, legal compliance audits, and public participation processes. He has gained experience across various sectors, including mining, oil and gas, construction, and engineering projects. A detailed CV and copies of professional registration certificates are included as APPENDIX A to this report.
EAPASA Registration:	Registered EAP: 2022/6016

5 DESCRIPTION OF THE ACTIVITY

5.1 PROJECT OVERVIEW AND REGULATORY CONTEXT

The Applicant, Char Technology (Pty) Ltd, proposes the installation and operation of a continuous, zoned hydraulic pusher furnace to produce VCN at a design capacity of up to ~6 t/day (~2,000 t/year) within the existing licensed facility footprint.

The facility operates under an approved Atmospheric Emission Licence (AEL) (ref. NDM/AEL/MP312/13/06), and the proposed change constitutes a change in process requiring an AEL amendment and EA processes.

5.2 LOCATION

The project is located on Erf 43 and 44, Ferrobank Township, 9 Noble Road, Ferrobank, Emalahleni Local Municipality, Mpumalanga, with centrepoint coordinates provided in the BAR.

5.3 PROCESS DESCRIPTION

The proposed VCN Production process is briefly explained as follows:

- Feedstock briquettes (~45 mm) comprise V_2O_5 flakes, V_2O_3, carbon powder, and trace iron powder, produced off-site and delivered to the facility.

- Briquettes are processed through preheat and primary furnace zones under nitrogen atmosphere with a temperature profile of ~600–1,500°C, followed by cooling (including water-assisted cooling) and packaging for dispatch.
- Off-gases are routed through abatement prior to release via a single stack.

6 DESCRIPTION OF THE SITE AND RELEVANT SENSITIVITIES

The BAR confirms the development occurs within a highly modified brownfield industrial site, largely within an existing building footprint with concrete surfaces and existing stormwater infrastructure, and no wetlands/watercourses within the regulated area (refer to Figure 1).

Key sensitivities flagged in the BAR and screening verification include (Figure 2):

- Air quality pathway is the primary environmental pathway requiring detailed assessment (AQIA is to be undertaken).
- Terrestrial biodiversity screening sensitivity (regional ecosystem listing) is acknowledged, but the BAR motivation indicates no vegetation clearance or ecosystem disturbance is expected due to the existing transformed footprint.

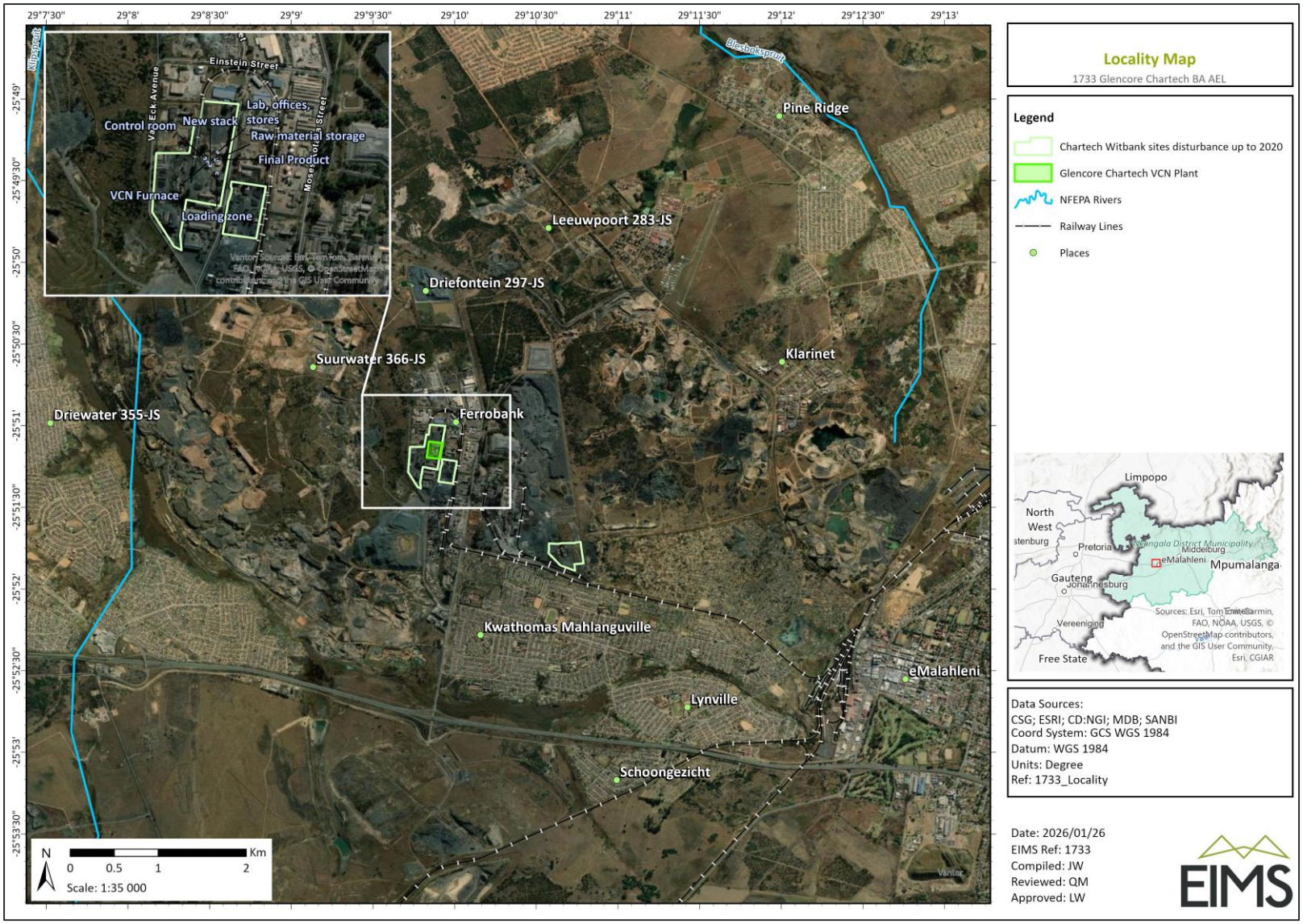

Figure 1: Project locality map

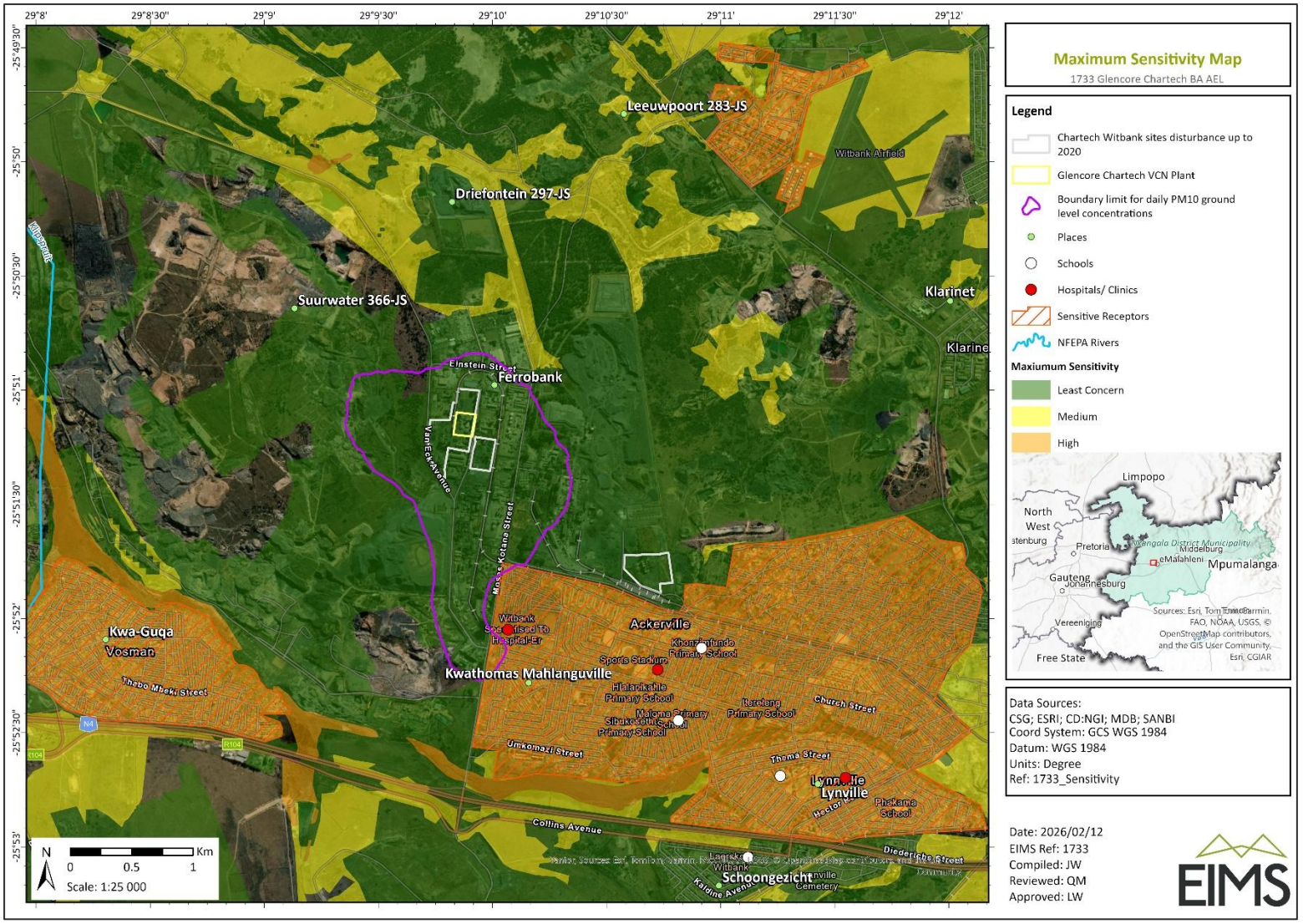

Figure 2: Final site sensitivity map

7 IDENTIFIED IMPACTS AND MANAGEMENT OUTCOMES

An environmental assessment has been undertaken as prescribed by the NEMA EIA Regulations. The EIA has identified relevant anticipated impacts and risks associated with the proposed activity. These impacts have been assessed in terms of the nature, extent, duration, magnitude, and probability and assigned an impact significance rating. The hierarchy of mitigation has been applied to the identified impacts and where possible the impacts have been avoided, or where avoidance is not possible, relevant actions for the management and mitigation have been provided. A re-assessment of the impact significance, post mitigation, was concluded. The impacts identified during the different phases of the activity and the significance of these impacts (post mitigation), together with the proposed impact management outcomes are listed in Table 3. These significance rating set the pre-emptive prediction of level of impact. The actual observed level of impact should be considered during the project development phases and where necessary reconsidered together with associated impact management outcomes and impacts, in consultation with the appointed Independent Auditor.

Table 3: Impact Management Outcomes.

Identified Impact	Relevant development Phase	Post Mitigation Significance	Proposed Impact Management Outcome
1: Air emissions and ambient air quality (operation; some construction dust)	Construction, Operation and Decommissioning	Medium-to-low negative	Compliance with applicable Minimum Emission Standards / licence conditions; no material deterioration of ambient air quality at sensitive receptors; complaints responded to via formal register and close-out
2: Impacts on personnel health and safety	Construction, Operation and Decommissioning	Low negative	Safe working environment maintained; incidents minimised; all staff equipped and trained.
3: Waste generation (construction, operation and decommissioning)	Construction, Operation and Decommissioning	Medium-to-low negative	Waste minimised, segregated and disposed of at licensed facilities with full recordkeeping.
4. Local procurement and economic stimulation/jobs	Construction, Operation and Decommissioning	Medium-to-low positive	Increased local economic activity; opportunities created for local suppliers and SMMEs.
5. Community well-being/communication and trust	Planning, Construction, Operation and Decommissioning	Medium-to-low negative	Community disruption minimised; concerns addressed promptly; no long-term nuisance impacts.

Identified Impact	Relevant development Phase	Post Mitigation Significance	Proposed Impact Management Outcome
6. Climate Change Impacts and Vulnerability	Operation	Medium-to-High Negative	Infrastructure remains resilient to extreme heat and heavy rainfall; Reduced heat-stress incidents and improved worker safety; Lower water consumption and improved drought resilience; Effective emergency response to climate-related events (fire, storms, heatwaves); Reduced carbon emissions through increased use of low-carbon or renewable energy.

The specific impact management actions or mitigation measures applicable to each of these impacts are presented in Section 10.

8 ENVIRONMENTAL MANAGEMENT FRAMEWORK

The compilation of an EMPr for an activity which is likely to result in significant environmental impacts is typically compiled at the culmination of a thorough investigation into the receiving environment and the identification and assessment of likely environmental impacts (i.e. EIA). This EMPr forms part of an EA application process. This EMPr aims to comply with the requirement of Appendix 4 of the EIA Regulations, 2014. These requirements are systematically addressed in the subsequent sections of this report. The primary objectives of the EMPr are as follows:

- To promote sustainability and describe an action programme to mitigate negative impacts as far as possible;
- To be a practical document that sets out both the goals and actions required in mitigation. Though the term “mitigation” can be broad in definition, it means in this context to “allay, moderate, palliate, temper or intensify.” Mitigation of a negative impact means that its effect is reduced. Mitigation of a positive impact means that its effect is increased or optimised; and
- To indicate responsibilities for the implementation of these action items within the EMPr.

This EMPr shall be deemed to have legal and contractual standing on the basis that its contents and specifically objectives are a detailed expansion of the environmental risks and consequent requirements of the EA (if, and when issued). Where relevant the Applicant[1] is responsible for delegating responsibility for compliance to designated parties (internal or external). Such delegation must be legally binding to the extent relevant.

The objectives and targets in this EMPr are further guided by the NEMA, and specifically by the EIA Regulations. The underlying principles of sustainable development are the ultimate objectives and target of this report. The environmental assessment process and this consequent EMPr includes measures to ensure the development activity complies with the following principles, as instilled in the NEMA, amongst others:

i. That the disturbance of ecosystems and loss of biological diversity are minimised and remedied;

[1] According to NEMA, the applicant is a person who has submitted an application for an environmental authorization to the competent authority and has paid the prescribed fee. This EMPr utilizes this term to refer to the person who is ultimately issued with the EA or equivalent permission and who is ultimately responsible for compliance therewith and the associated EMPr.

ii. That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

iii. That waste is avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;

iv. That a risk-averse and cautious approach is applied, which considers the limits of current knowledge about the consequences of decisions and actions; and

v. That negative impacts on the environment and on people's environmental rights be anticipated, prevented and remedied.

An effective EMPr is not a static and isolated management tool and should rather be implemented in a systematic and dynamic manner. The EMPr should be supported by senior management and involve engagement between the applicant, its contractors and workers, and relevant external stakeholders (including the project affected communities).

8.1 ENVIRONMENTAL MANAGEMENT PRINCIPLES

NEMA establishes a general framework for environmental law, in part by prescribing national environmental management principles that must be applied when making decisions that may have a significant impact on the environment. These principles are briefly summarised below:

8.1.1 HOLISTIC PRINCIPLE

The Holistic principle, as defined by NEMA (Section 2(4) (b)) requires that environmental management must be integrated, acknowledging that all elements of the environment are linked and inter-related and it must take into account the effect of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option (defined below in Section 8.1.2). Holistic evaluation does not mean that a project must be looked at as a whole. It rather means that it must be accepted that there is an all-inclusive whole into which a project is introduced. If the indications are that the project could have major adverse effects, the project must be reconsidered and where appropriate, re-planned or relocated to avoid an adverse impact or to ensure a beneficial impact.

8.1.2 BEST PRACTICABLE ENVIRONMENTAL OPTION

When it is necessary to undertake any action with environmental impacts, the different options that could be considered for the purpose must be identified and defined. The Best Practicable Environmental Option (BPEO) is defined in NEMA as "the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term." Other guidelines typically used for environmental management in terms of other legislation include BPM which is the Best Practicable Means and BAT which is the Best Available Technology.

8.1.3 SUSTAINABLE DEVELOPMENT

The concept of sustainable development was introduced in the 1980's with the aim to ensure that the use of natural resources is such that our present needs are provided without compromising the ability of future generations to meet their own needs. The constitution of South Africa is built around the fact that everyone has the right to have the environment protected through reasonable legislative and other measures that secure ecologically sustainable development. The National Environmental Principles included in the NEMA require development to be socially, environmentally and economically sustainable.

8.1.4 PREVENTATIVE PRINCIPLES

The preventative principle is fundamental to sustainable development and requires that the disturbance to ecosystems and the pollution, degradation of the environment and negative impacts on the environment be avoided, or, where they cannot be altogether avoided, are minimised and remedied.

8.1.5 THE PRECAUTIONARY PRINCIPLE

The precautionary principle requires that where there is uncertainty, based on available information, that an impact will be harmful to the environment, it is assumed, as a matter of precaution, that the said impact will be harmful to the environment until such time that it can be proven otherwise. The precautionary principle requires that decisions by the private sector, governments, institutions and individuals need to allow for and recognise conditions of uncertainty, particularly with respect to the possible environmental consequences of those decisions. In South Africa, the DWS (then DWAF) adopted a BPEO guideline in 1991 for water quality management and in 1994 in the Minimum Requirements document for waste management.

In terms of DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, 1994, the precautionary principle is defined as, "Where a risk is unknown; the assumption of the worst-case situation and the making of provision for such a situation." Here the precautionary principle assumes that a waste or an identified contaminant of a waste is "both highly hazardous and toxic until proven otherwise."

In the context of the EIA process in South Africa, the precautionary principle also translates to a requirement to provide sound, scientifically based, information that is sufficient to provide the decision-making authority with reasonable grounds to understand the potential impacts on the environment, the extent thereof and how impacts could be mitigated. If such information is not adequate for this purpose, the relevant authority cannot be satisfied as is required and then the authority should require that further information be collected and provided.

8.1.6 DUTY OF CARE AND CRADLE TO GRAVE PRINCIPLE

In terms of the NEMA Section 28, "*Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment*."

By way of example, the principle of "duty of care" in terms of waste management emphasises the responsibility to make sure that waste is correctly stored and correctly transported, as it passes through the chain of custody to final point of disposal. This means that waste must always be stored safely and securely. The company removing and disposing of waste also holds the responsibility to hold the relevant licenses, and that waste is transported alongside the necessary paperwork.

"Cradle to Grave" refers to the responsibility a company takes for the entire life cycle of a product, service or program, from design to disposal or termination. Section 2(4)(e) explicitly states that companies are responsible for the environmental health and safety consequences of a policy, programme, project, product, process, service, or activity throughout its life cycle.

8.1.7 POLLUTER PAYS PRINCIPLE

The "polluter pays principle" holds that the person or organisation causing pollution is liable for any costs involved in cleaning it up or rehabilitating its effects. It is noted that the polluter will not always necessarily be the generator, as it is possible for responsibility for the safe handling, treatment or disposal of waste to pass from one competent contracting party to another. The polluter may therefore not be the generator but could be a disposal site operator or a transporter. Through the 'duty of care' principle, however, the generator will always be one of the parties held accountable for the pollution caused by the waste. Accordingly, the generator must be able to prove that the transferral of management of the waste was a responsible action. The polluter pays principle acceding to NEMA dictates that "the cost of remedying pollution, environmental degradation and consequent adverse effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment."

8.2 DUTY OF CARE RESPONSIBILITIES

Section 28 of the NEMA makes provision for duty of care, and remediation of environmental damage. The binding principles are described below:

1. Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

   (1A) Subsection (1) also applies to a significant pollution or degradation that-

   a) occurred before the commencement of this Act;

   b) arises or is likely to arise at a different time from the actual activity that caused the contamination; or

   c) arises through an act or activity of a person that results in a change to pre-existing contamination.

2. Without limiting the generality of the duty in subsection (1), the persons on whom subsection (1) imposes an obligation to take reasonable measures, include an owner of land or premises, a person in control of land or premises or a person who has a right to use the land or premises on which or in which-

   a) any activity or process is or was performed or undertaken; or

   b) any other situation exists, which causes, has caused or is likely to cause significant pollution or degradation of the environment.

3. The measures required in terms of subsection (1) may include measures to-

   a) investigate, assess and evaluate the impact on the environment;

   b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment;

   c) cease, modify or control any act, activity or process causing the pollution or degradation;

   d) contain or prevent the movement of pollutants or the cause of degradation;

   e) eliminate any source of the pollution or degradation; or

   f) remedy the effects of the pollution or degradation.

8.3 FAILURE TO COMPLY WITH ENVIRONMENTAL CONSIDERATIONS

Within the provisions of the relevant environmental legislation, there are several penalties for non-compliance or offences. Below a few extracts are presented for information purposes, however these must not be read in isolation, and the reader is reminded that there are other Acts, or sections of Acts, that may be applicable to the relevant project:

- National Environmental Management Act:
  - NEMA Section 49B(1): A person convicted of an offence in terms of section 49A(1)(a), (b), (c), (d), (e), (f) or (g) is liable to a fine not exceeding R10 million or to imprisonment for a period not exceeding 10 years, or to both such fine or such imprisonment- this includes commencing with a listed activity without an EA or the non-compliance with conditions of any EA and associated EMPr;
  - NEMA Section 49B(2): A person convicted of an offence in terms of section 49A(1)(i), (j) or (k) is liable to a fine not exceeding R5 million or to imprisonment for a period not exceeding 5 years, and in the case of a second or subsequent conviction to a fine not exceeding R10 million or to imprisonment for a period not exceeding 10 years, and in both instances to both such fine and such imprisonment;

- NEMA Section 49B(3): A person convicted of an offence in terms of section 49A(1)(h), (l), (m), (n), (o) or (p) is liable to a fine or to imprisonment for a period not exceeding one year, or to both a fine and such imprisonment;

- National Water Act:
    - NWA Section 151 (1c): No person may fail to comply with any condition attached to a permitted water use under this Act;
    - NWA Section 151 (2): Any person who contravenes any provision of subsection (1) is guilty of an offence and liable, on the first conviction, to a fine or imprisonment for a period not exceeding five years, or to both a fine and such imprisonment and, in the case of a second or subsequent conviction, to a fine or imprisonment for a period not exceeding ten years or to both a fine and such imprisonment;
- National Environmental Management: Biodiversity Act:
    - NEM:BA Section 102 (1): A person convicted of an offence in terms of section 101 is liable to a fine not exceeding R10 million, or an imprisonment for a period not exceeding ten years, or to both such a fine and such imprisonment.
- National Environmental Management: Waste Act:
    - NEM:WA Section 68 (1): A person convicted of an offence referred to in section 67(1)(b), (c), (d), (e), (f), (i), (j), (k) or (l) or section 67(2)(a), (b), (c), (d) or (e) is liable to a fine not exceeding R5 000 000 or to imprisonment for a period not exceeding five years, or to both a fine and such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of the National Environmental Management Act;
    - NEM:WA Section 68 (2): A person convicted of an offence referred to in section 67(1)(b), (c), (d), (e), (f), (i), (j), (k) or (l) or section 67(2)(a), (b), (c), (d) or (e) is liable to a fine not exceeding R5 000 000 or to imprisonment for a period not exceeding five years, or to both a fine and such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of the National Environmental Management Act;
    - NEM:WA Section 68 (3): Any person convicted of an offence referred to in section 67(1)(m) is liable to a fine or to imprisonment for a period not exceeding six months or to both a fine and such imprisonment;
    - NEM:WA Section 68 (4): A person who is convicted of an offence in terms of this Act and who persists after conviction in the act or omission that constituted the offence commits a continuing offence and is liable on conviction to a fine not exceeding R1 000 or to imprisonment for a period not exceeding 20 days, or to both such fine and such imprisonment, in respect of each day that person persists with that act or omission;

A procedure for non-compliances (i.e. incentives or disincentives for conformance and non-conformance with the EMPr requirements) must be employed to ensure that the EMPr is adequately implemented. The system to be used must be determined before the project commences, included in the tender documents and contracts, and made clear to all project workers. The system may include that the independent Environmental Control Officer (ECO) can be authorized to impose spot fines on the Contractor and/or his subcontractors for any of the defined transgressions. Such fines should be issued in addition to any remedial costs incurred as a result of non-compliance with the environmental specifications and or legal obligations.

8.4 ROLES AND RESPONSIBILITIES

The effective implementation of this EMPr depends on clearly defined roles, responsibilities, and reporting lines within an established institutional framework. This section provides guidance on the key environmental roles and associated reporting structures; however, project-specific requirements will ultimately determine the appointment of designated personnel to fulfil these roles. It is important to note that, in the absence of a formally appointed individual—such as an Environmental Control Officer (ECO)—the holder or applicant of the

EA or associated enabling permission remains accountable for ensuring that all duties assigned to such roles in this document are carried out. This approach ensures accountability, promotes effective communication, and supports compliance with legal and regulatory obligations throughout the project lifecycle.

Roles and responsibilities presented herein are broad and must be read in conjunction with the specific roles and responsibilities identified in Section 1 pertaining to specific impact management actions.

8.4.1 PROJECT APPLICANT/PROPONENT

The applicant is the principal party (Proponent) of the project and is the Holder of the relevant approvals (Authorisations, Licences and Permits). The legal accountability for correct implementation of the requirements of the relevant approvals, and this EMPr, falls primarily upon the applicant and must therefore be built into all contractor's contractual agreements. The applicant's role typically includes:

- Provide for all necessary supervision during the execution of the project including appointment of key personnel to act on his/her behalf during the project (e.g.: Project Manager, ECO, etc). The key personnel will be tasked with ensuring that the various contractors/developers comply with the necessary provisions of the approvals and EMPr;
- Ensure that the various contractors and applicable sub-contractors appoint a suitably qualified, competent Environmental Officer (CEO) that will be responsible for among others, ensuring daily compliance with the approvals and EMPr throughout the execution of the relevant project components;
- Notify the relevant competent authority of changes in the development activities resulting in significant environmental impacts;
- Assess the various contractor's environmental performance during the survey, in consultation with the DPM and ECO;
- Ensure compliance with relevant environmental legislation and associated regulations;
- To implement the projects as per the approved project plan;
- To ensure that implementation is conducted in an environmentally acceptable manner;
- To inform and educate all employees about the environmental risks associated with the different activities that should be avoided during the survey process and lessen significant impacts to the environment;
- Be fully knowledgeable of the EMPr and ensure overall implementation across phases.
- Ensure compliance by all parties and implement corrective/preventative actions where required.
- Ensure required permits/licences are obtained/maintained and conditions complied with (EA/AEL amendment context).
- Maintain (or ensure maintenance of) records of complaints and records of emergencies/incidents as auditable evidence.

The Applicant is responsible for the development and implementation of the EMPr and, where relevant, ensuring that the conditions in the relevant approvals are satisfied. Where activities are contracted out (e.g. to Contractors and Subcontractors), the liability associated with non-compliance still rests with the Applicant (unless otherwise agreed upon between the authorities, the Applicant and the contracting parties). The Applicant (and not the Contractor) is therefore responsible for liaising directly with the relevant authorities with respect to the preparation and implementation of the EMPr and meeting authorisation conditions.

8.4.2 DEVELOPERS PROJECT MANAGER

The developers project manager (DPM) is the duly appointed representative of the EA holder for the purposes of ensuring compliance with the EMPr and other applicable conditions (authorisation, permits, and /or licences).

During the development, it is envisaged that there may be several contractors and sub-contractors undertaking various activities on the project. The DPM would oversee all contractors and sub-contractors from a project management point of view. The roles and responsibilities of the DPM typically include the following:

- Roles:
    - The DPM acts on behalf of the Applicant regarding the administration of contracts to sub-contractors, etc. and will has overall responsibility for the management of the project and the implementation of the EMPr on behalf of the EA holder.
    - Where required, an environmental control officer (ECO) must be contracted by the DPM to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and other applicable conditions. The DPM is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent.
- Responsibilities:
    - Be fully conversant with the conditions of the EA and other applicable permissions, authorisations and licences.
    - Ensure that all stipulations within the EMPr are communicated and adhered to by the EA holder and its Contractor(s).
    - Ensure **monthly environmental performance** is reviewed using registers (incidents, complaints, waste manifests) and that trends are acted on.
    - Issuing of site instructions to the Contractor for corrective actions required.
    - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings.
    - Overall management of the project and EMPr implementation.
    - Ensure that periodic environmental audits are undertaken on the project implementation.
    - Ensure all permits, authorisations and licenses are obtained, monitored and adhered to.
    - Arrange that the final environmental audit for construction is conducted by an independent auditor/consultant in accordance with the conditions of EA.

8.4.3 ENVIRONMENTAL CONTROL OFFICER

The ECO is appointed by the Applicant or the DPM and must be independent from the Applicant and the Contractors and remains appointed for the duration of the activity. The ECO must have a tertiary qualification in an Environmental Management or appropriate field and must have an appropriate level of experience.

The ECO provides feedback to the DPM regarding all environmental matters. The ECO's key role is auditing the implementation of the EMPr. For the purposes of implementing the conditions contained herein, the ECO should be appointed sufficiently in advance of commencement of development activities. The ECO is responsible for the auditing function as well as the clarification of environmental conditions contained in this EMPr to anyone working on the site.

The roles and responsibilities of the ECO typically include the following:

- Roles
    - The ECO must have appropriate training and experience in the implementation of environmental management specifications.
    - The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts.
    - The Contractor, Contractor's Environmental Officer and the Environmental Officer are answerable to the ECO for non-compliance with the Performance Specifications as set out in

the EMPr and other applicable conditions. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise.

- The ECO is also required to conduct compliance audits, verify the monitoring reports submitted by the Contractor's Environmental Officer.
- The ECO is to provide feedback to the DPM regarding all environmental matters. The DPM in turn reports back to the Applicant, the Contractor, and Registered Interested and Affected Parties (I&APs), as required.
- Issues of non-compliance raised by the ECO must be taken up by the PM, and resolved with the Contractor as per the conditions of contract.
- Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the PM.
- The ECO must also, as specified by the EA, report to the Competent Authority/ies (CA) as and when required.
- Further note, the ECOs function is not limited to the construction phase alone but is also an active role during the operational and later phases of the project where applicable.

- Responsibilities:
  - Be aware of the findings and conclusions of all BA documentation, and EA and licenses related to the development.
  - Be familiar with the recommendations and mitigation measures of this EMPr.
  - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them.
  - Undertake regular and comprehensive site inspections/compliance audits of the construction site according to the EMPr and applicable licenses in order to monitor compliance as required.
  - Educate the construction team about the management measures contained in the EMPr and environmental licenses.
  - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective.
  - Monitoring the performance of the contractors using an environmental compliance checklist and ensuring compliance with the EMPr and associated method statements.
  - In consultation with the DPM order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses or have not adequately remedied such.
  - Issuing of site instructions (in consultation with the DPM) to the contractor for corrective actions required.
  - Compile regular ECO reports highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr. ECO reports must be submitted to the DPM and where applicable be available for the Environmental Audits.
  - Validating the regular site inspection reports, which are to be prepared by the CEO.

- Validating the findings of the regular environmental internal audits on the CEO which are to be prepared by the EO.
- To monitor and review all environmental incidents (spills, impacts, legal transgressions etc.) and corrective and preventive actions taken in the environmental incident log, with inputs provided by the CEO.
- Checking the CEO's public complaints register in which all complaints are recorded, as well as action taken.
- Assisting in the resolution of conflicts.
- Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the contractor and/or sub-contractors.
- In case of non-compliances, the ECO must first communicate this to the DPM, who has the power to ensure this matter is addressed in accordance with the relevant legislative requirements. Should no action or insufficient action be taken, the ECO may report this matter directly to the authorities as non-compliance.
- Maintenance, update and review of the EMPr with due consideration of the NEMA processes applicable thereto.
- Communication of all modifications to the EMPr to the relevant stakeholders.
- Facilitate and advise on the environmental audits.
- Verify that the Complaints Register is tabled at the required meetings and that close out is documented.
- Review incident classification (minor/medium/major) and ensure statutory notification triggers are acted on.

It is important to note that where opportunity for interpretation occurs within the conditions of this EMPr, the interpretation of the ECO will take preference. If necessary, further clarification may be sought from the relevant competent authority.

Where the ECO and IEA are the same independent entity, the Regulation 34 audit function remains organisationally independent of the EA holder and contractor(s), with the audit report compiled and submitted in accordance with Appendix 7, free of influence, and remunerated without any approval-linked contingency.

8.4.4 CONTRACTOR

The contractor is usually a third party appointed by the applicant/DPM to undertake the actual development activities. In instances where the Applicant will be implementing the project activities then the obligations and responsibilities assigned to the contractor will fall on the applicant. For the purposes of this section, any contractor (regardless of who appointed them) is referred to as the "contractor".

The relevant contractors are answerable to the DPM and ECO for all environmental issues associated with the project. The principal contractor/s, any other contractors and sub-contractors will be required to comply with the provisions contained herein, and accordingly, the EMPr and its provisions must form part of any contractual arrangements between the applicant and contractors, and contractors and their sub-contractors, etc. The contractor must comply with EMPr and ensure that all his employees and sub-contractors appointed by him/her are familiar with the EMPr.

The roles and responsibilities of the Contractor/s include the following:

- Roles:

- The contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that method statements are implemented as described.
- External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the EA holder.
- The contractors are required, where specified, to provide method statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development of the project.
- The main contractor that is appointed by the EA holder and has a signed contract with the EA holder must appoint a contractor's environmental officer (CEO). The CEO of the main contractor will then be responsible for all sub-contractors working under the main contractor in terms of verifying that they abide by the requirements of the EMPr.

- Responsibilities:
  - Implementation and compliance with recommendations and conditions of the EA and EMPr, including providing the contractor's environmental protection policy and the specific method statements for the project.
  - Ensure all site staff are trained and kept updated in terms of the EA, EMPr and other legal requirements.
  - Project delivery and quality control for the development services as per appointment.
  - Employ a CEO to monitor and report to ECO on the activities on-site during the construction or contracted period.
  - Ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely.
  - Attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones.
  - Ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in this EMPr, to the satisfaction of the ECO.

8.4.5 CONTRACTOR ENVIRONMENTAL OFFICER

The principal contractor shall appoint a Contractors Environmental Officer (CEO), who is responsible for implementation of the EMPr. Depending on the complexity of the project the principal contractor may appoint and assign a CEO who is responsible for applying the CEO duties for the principal contractor as well as associated sub-contractors. The scope of the CEO must be such that the CEO is adequately resourced to be able to effectively implement the specified roles and responsibilities. Should the CEO delegation or assignment not be adequate then the DPM may issue instruction to the contractor to supplement the resources[2].

The Contractor must ensure that the Contractor's EO is suitably qualified and competent to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other Contractors, labourers, the ECO and the public (if necessary). The Contractor's EO ensures that all sub-contractors working under the Contractor and sub-contractors abide by the requirements of the EMPr. The costs related to the implementation of the EMPr will be the responsibility of the relevant Contractor/ sub-contractor.

[2] It is noted that where impact management outcomes and associated management actions relate to post construction phases and there is not a specific contractor or implementing agent, then the role of the CEO can, where applicable, be allocated to an internal representative of the applicant or proponent.

The roles and responsibilities of the CEO/s include the following:

- Roles:
    - The CEO's primary role is to coordinate the environmental management activities of the contractor on site and to be responsible for on-site implementation of the EMPr (or relevant sections of the EMPr) applicable to the contractor.
    - The CEO can be a dedicated environmental officer; or an independent consultant.
    - The contractor must ensure that the CEO is suitably qualified and experienced to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site contractors, labourers, the ECO and the public.
    - The CEO ensures that all sub-contractors working under the contractor abide by the requirements of the EMPr.
    - The contractor is answerable to the DPM and ECO for all environmental issues associated with the project.
    - Contractor performance will, amongst others, be assessed on health, safety and environmental management criteria.
- Responsibilities:
    - Ensure all their staff are aware of the relevant environmental requirements, conditions and constraints with respect to all of their activities on site.
    - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr, method statements and/or other licences and permits.
    - Review the contractors safe work procedures/risk assessments/induction training/DSTI's (daily safe task instruction) during the survey and include information relating to the relevant environmental risks and appropriate mitigation measures;
    - Establishing and maintaining an environmental incident and non-compliance register;
    - To record, implement and monitor all environmental incidents (spills, impacts, legal transgressions etc.) and corrective and preventive actions taken in the incident and non-compliance register.
    - Maintain: (i) Incident and Non Compliance Register and (ii) Stakeholder/Complaints Register, with required minimum fields.
    - Establishing and maintaining a stakeholder grievance or complaints register;
    - Respond to enquiries and requests from the ECO.
    - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes.

8.4.6 ENVIRONMENTAL AUDITOR

The Independent Environmental Auditor (IEA) is an impartial and suitably qualified professional appointed to evaluate and verify compliance with the conditions of the Environmental Authorisation (EA), the approved Environmental Management Programme (EMPr), and any other relevant environmental obligations. The IEA operates independently of the project proponent or applicant, contractor, CEO, and any party with a vested interest in the activity, ensuring objectivity and transparency in the auditing process.

The responsibility of the IEA includes the following:

- Roles:
    - Independent compliance monitoring and reporting to the competent authorities.
- Responsibilities
    - Undertake audits in accordance with Regulation 34 of the NEMA EIA Regulations, 2014 (as amended) to determine compliance with the EA, EMPr, and closure plan (if applicable).
    - Ensure audits are performed at the frequency specified in the EA or, if not specified, at intervals not exceeding five years.
    - Audits must identify EMPr improvements, corrective actions, and follow up verification.
    - Compile audit reports in line with the requirements of Appendix 7 of the NEMA EIA Regulations, including findings, non-compliances, corrective actions, and recommendations for improvement.
    - Confirm that the report reflects accurate, evidence-based observations and professional judgment.
    - Declare independence and confirm no conflict of interest in relation to the audited activity, except for fair remuneration for services rendered.
    - Ensure that remuneration is not linked to approval or decision-making outcomes.
    - Submit or ensure the submission of the audit report to the relevant Competent Authority/ies within the prescribed timeframe.

The IEA role as well as the ECO role represent independent and objective oversight. As such, depending on the nature of the specific activity the role of the ECO and the IEA may be assigned to one specific person or entity. The key distinction between the IEA and the ECO is that the IEA will be the role that prepares and submits the Environmental Audit Report as prescribed by regulation 34 of the EIA Regulations.

8.5 DOCUMENT CONTROL

A formal document control system should be established. The document control system must provide for the following requirements;

- Documents are approved for adequacy prior to use;
- Review and update documents as necessary and re-approve documents;
- Ensure that changes and the current version status of documents are identified;
- Ensure that relevant versions of applicable documents are available at points of use;
- Ensure that documents remain legible and readily identifiable;
- Ensure that documents of external origin necessary for the EMPr are identified and their distribution controlled; and
- Prevent unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose.

The responsibility for establishing a suitable document control system rests with the DPM.

8.6 RECORD KEEPING

It is essential that an official procedure for control of records be developed to ensure records required to demonstrate conformity to environmental standards are maintained. The Applicant, or the DPM is therefore required to develop and maintain a procedure for the identification, storage, protection, retrieval, retention and disposal of records as part of the EMPr. Records must be legible, identifiable and traceable.

8.7 RECORDING AND RESPONDING TO NON-COMPLIANCES

Non-compliance will be identified and managed through the following four key activities including:

- Inspections of the activities;
- Monitoring of selected environmental quality variables (where relevant);
- Audits of the activities and relevant documentation; and
- Reporting.

An environmental incident and non-compliance (NC) register must be prepared and maintained by the CEO throughout the relevant project activity phases to track and monitor environmental concerns, incidents, and non-compliances. The register must include details of date, location (coordinates), description of the NC or Incident, applicable environmental commitment/standard, corrective action taken, adequacy of corrective action, date rectified, etc.

Non-compliance with the EMPr or any other environmental legislation, specifications or standards shall be recorded by the CEO in the incident and non-compliance register. This register shall be maintained by the CEO and will be sent to the Applicant or DPM, Contractor, and ECO on a regular basis. The DPM shall ensure that the responsible party takes the necessary corrective actions. NCs' may only be closed out in the register by the ECO upon confirmation that adequate corrective action has been taken and/or documented proof provided. The register should be utilised to measure overall environmental performance.

8.8 ENVIRONMENTAL INCIDENCES AND NON-COMPLIANCE

For the purposes of this project, an environmental incident can be divided into three levels, i.e. major, medium and minor. All environmental incidents shall be recorded in the incident and non-compliance register. Definitions of environmental incidents are provided in Table 4.

Table 4: Description of incidents and non-compliances for the purpose of the project

Non-Compliance	An Environmental Non-Compliance (NC) refers to any failure to adhere to the conditions, commitments, or requirements stipulated in an Environmental Authorisation (EA), Environmental Management Programme (EMPr), or applicable environmental legislation. Such non-compliance may result in environmental harm, legal liability, or reputational risk for the project proponent. Environmental non-compliance encompasses any deviation from approved environmental management measures, legal obligations, or performance standards that could directly or indirectly lead to adverse environmental, health, or safety outcomes. Key elements include: 1. Deviation from Approved Measures o Failure to implement specified impact management actions or monitoring requirements as outlined in the EMPr or EA. 2. Contravention of Legal Obligations o Breach of principles under the National Environmental Management Act (NEMA), EIA Regulations, or other sector-specific environmental laws. 3. Failure to Meet Performance Outcomes o Inability to achieve the impact management outcomes defined in the EMPr, such as biodiversity protection, pollution prevention, or rehabilitation targets. 4. Unauthorized Activities o Commencing or continuing listed activities without obtaining the necessary environmental authorisation or permits. 5. Deviation from Work Standards or Procedures

	○ Any departure from established work practices, operational procedures, or management system requirements that could cause: ▪ Injury or illness to personnel or communities ▪ Damage to the workplace or surrounding environment (including marine or aquatic ecosystems) ▪ Legal transgression or regulatory breach.
Major Environmental Incident	An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in widespread, long-term, irreversible significant negative impact on the environment and/or has a high risk of legal liability. A major environmental incident usually results in a significant pollution and may entail risk of public danger. Major environmental incidents usually remain an irreversible impact even with the involvement of long-term external intervention i.e. expertise, best available technology, remedial actions, excessive financial cost etc. Major environmental incidents must be reported to the authorities. The ECO shall make the final decision as to whether a particular incident should be classified as a Major incident.
Medium Environmental Incident	An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in widespread or localised, short term, reversible significant negative impact on the environment and/or has a risk of legal liability. A medium environmental incident may be reported to the authorities, can result in significant pollution or may entail risk of public danger. The impact of medium environmental incidents should be reversible within a short to medium term with or without intervention. The ECO shall make the final decision as to whether a particular incident should be classified as a Medium incident.
Minor Environmental Incident	An incident or sequel of incidents, whether immediate or delayed, where the environmental impact is negligible immediately after occurrence and/or once-off intervention on the day of occurrence.
Non-compliance	Any failure to adhere to the conditions, commitments, or requirements stipulated in an EA, EMPr, or relevant environmental legislation. Key elements of an NC may include: • Deviation from approved measures: Not implementing the specified impact management actions or monitoring requirements. • Contravention of legal obligations: Breaching NEMA principles, EIA Regulations, or sector-specific environmental laws. • Failure to meet performance outcomes: Not achieving the impact management outcomes defined in the EMPr. • Unauthorized activities: Commencing or continuing listed activities without proper environmental authorization.

The following incident reporting procedures shall apply to this project:

- All environmental incidents shall be reported to CEO, and the ECO, and shall be recorded in the incident and non-compliance register;
- An incident and non-compliance report shall be completed by the relevant party responsible for the incident or non-compliance for all medium and major incidents and the report shall be submitted to the DPM and the ECO as soon as possible but preferably no later than 5 calendar days of the incident;
- The ECO shall in consultation with the CEO advise on the appropriate measures and timeframes for corrective action; and
- In the event of an emergency incident (unexpected sudden occurrence), including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed, the Applicant shall notify the relevant authorities

in accordance with Section 30(3) of the NEMA. The Applicant shall engage the ECO who shall assess all major incidents and shall advise the Applicant when any such incident must be reported to the authorities as per the above requirement.

8.9 REVIEW AND REVISION OF THE EMPR

It is important to note that this EMPr is made legally binding on the Applicant through the relevant approvals. The EMPr is a dynamic document which may require such alteration and /or amendment as the project evolves. Conditions under which the EMPr would require revision may include:

- Changes in legislation;
- Occurrence of unanticipated impacts or impacts of greater intensity, extent and significance than predicted;
- Inadequate mitigation measures (i.e. where environmental performance does not meet the required level despite the implementation of the mitigation measure);
- Secondary impacts occur as a result of the mitigation measures;
- Instances where the implementation of the specified management, as a result of changes in circumstances, may become impractical or unreasonable to implement; and
- Where the outcome of an Environmental Audit has identified shortcomings in the EMPr or associated compliance.

The Applicant in consultation with the ECO should be responsible for ensuring that the registration and updating of all relevant EMPr documentation is carried out. It shall be the responsibility of the Applicant, in consultation with the DPM and ECO, to ensure that all personnel are performing according to the requirements of the document control procedure, and to initiate the revision of controlled documents, when required by changes in process or operations.

The ECO must undertake a risk assessment of any proposed changes to the EMPr. This risk assessment must be included in the applicable environmental audit report undertaken by the IEA, and where applicable supported by the necessary proof of public consultation. It is important to note that if alterations and/or amendments are required these may only be affected in accordance with the relevant legal processes. The present legislation requirements stipulate that once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

1. Amendments to the impact management outcomes must be made in line with the process as contemplated in Regulation 37 of the EIA Regulations; and
2. Amendments to impact management actions must be made in line with the process contemplated in Regulation 36 of the EIA Regulations.

Prior to initiating or implementing any EMPr amendments the relevant Competent Authority should be engaged to confirm the correct process.

8.10 ENVIRONMENTAL AWARENESS PLAN AND TRAINING

Training and environmental awareness is an integral part of a complete EMPr. The overall aim of the training will be to ensure that all applicable staff are informed of their requirements and obligations pertaining to the relevant approvals and this EMPr and any environmental risk which may result from their work.

The DPM and contractor must ensure that all relevant employees are trained and capable of carrying out their duties in an environmentally responsible and compliant manner and can comply with the relevant environmental requirements. To obtain buy-in from staff, individual employees need to be involved in:

- Identifying the relevant risk;
- Understanding the nature of risks;
- Devising risk controls; and

- Given incentive to implement the controls in terms of legal obligations.

The DPM and contractor, with guidance from the ECO, shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. All training must be formally recorded, and attendance registers retained.

The specific requirements for environmental training include:

- Environmental Induction Training: All workers must receive induction training which shall be presented by the Contractors Environmental Representatives. The induction training must include an environmental management component which will be prepared by the CEO and presented where possible by the CEO. The training material must include general environmental awareness with an overview of the approved EMPr and applicable approvals. Health and safety expectations including communication and reporting to key personnel, including incidents and during emergencies, should also be outlined. Any key sensitive environmental areas or features must be identified and described in this training. The Induction Training Material must be reviewed and approved by the ECO;
- Regular Environmental Toolbox Talks will be prepared by the CEO to cover a range of environmental topics and must be presented to relevant staff during applicable times during the implementation of the development activities. The aim of these toolbox talks will be to inform employees of general environmental requirements pertaining to specific activities, as well as specific EMPr and approval requirements and obligations. The ECO shall review environmental toolbox talks on a periodic basis to ensure the material is relevant and appropriate. The ECO may identify supplementary training or additional topics that must be covered;
- Informal training of all relevant staff is also required on an on-going basis through informal discussions, on-site supervision and through facilitation of day-to-day activities. Such training must be given or otherwise facilitated by the CEO; and
- The CEO must review all safe work procedures/risk assessments/DSTI's (daily safe task instruction) from the safety department and include the relevant environmental risks and appropriate mitigation measures where necessary. Since the above procedures are specific to the applicable activity being undertaken, the inclusion of environmental measures aims to ensure each activity is undertaken in an environmentally responsible manner.

Training must include as a minimum the following topics:

- EA and EMPr conditions and roles/responsibilities (tailored to specific teams depending on their individual roles).
- Emergency preparedness and response procedures.
- Fire prevention and response.
- Procedures/ requirements for working in proximity to sensitive areas.
- Waste management.
- Water management and conservation.
- Code of conduct for interacting with internal and external stakeholders.
- Heritage sites: known heritage sensitives and associated controls as well as potential unknown heritage features and the implementation of the Chance Finds Procedure.

8.11 EMERGENCY RESPONSE PLAN

The DPM and contractor must identify potential emergencies and develop procedures for preventing and responding to them. There are several options for dealing with high priority impacts and risks, as the paradigm has two components, probability and consequence. The design of control measures rests on understanding the cause and effect. Best practice is to intervene with the ultimate factors where feasible, rather than treat the

outcomes. Emergency response therefore has the option of reducing probability or reducing the consequence while reducing the probability is the preferred option.

The DPM and Contractor shall be required to develop and implement an Emergency Preparedness and Response Plan (EPRP) prior to commencing work. The Applicant must ensure that the Emergency Preparedness and Response Plan makes provision for environmental emergencies, including, but not limited to:

- Fire Prevention;
- Fire Emergency Response;
- Spill prevention;
- Spill Response;
- Accidents to employees; and
- Use of hazardous substances and materials, etc.

The DPM and Contractor must ensure that lists of all emergency telephone numbers/contact persons (including fire control) are kept up to date and that all numbers and names are posted at relevant locations.

8.12 SPILL RESPONSE PROCEDURE

The DPM and Contractor must ensure that all employees, staff and labourers are informed and instructed regarding implementation of spill prevention measures and spill response procedures. In the event of a spill, the following general requirements shall apply, and the detailed spill procedure must cater for these requirements:

- Immediately reporting of spills to the relevant supervisor and CEO (this requirement must be including in induction training);
- Take immediate action to contain or stop the spill where it is safe to do so;
- Contain the spill and prevent its further spread;
- Dispose of any contaminated materials according to appropriate waste disposal procedure. Note: Waste from spills of hazardous materials shall be disposed of as hazardous waste at a suitably licensed waste disposal facility;
- The CEO shall record details of the spill in their respective incident and non-compliance register;
- Photographic evidence shall be obtained of the spill clean-up; and
- Relevant waste manifests retained.

In the case of large spills, the services of a specialist spill response agency shall be required, who shall advise on appropriate clean-up procedures and follow-up monitoring (if required).

The Applicant must also, (as per Section 30 of the NEMA) notify the Director-General (DWS, Competent Authority, DFFE), South African Police Services, Provincial Environmental Authority, the Local Municipality, and any persons whose health may be affected of the nature of an incident including:

- Any risks posed to public health, safety and property;
- Toxicity of the substance or by products released by the incident; and
- Any step taken to avoid or minimise the effects of the incident on public health and the environment.

8.13 MEASURES TO CONTROL OR REMEDY ANY CAUSES OF POLLUTION OR DEGRADATION

The broad measures to control or remedy any causes of pollution or environmental degradation because of the proposed activities taking place are provided below:

- Ensure that the environmentally sensitive areas are adequately understood by applicable staff and adequately demarcated;

- Contain potential pollutants and contaminants (where possible) at source;
- Handling of potential pollutants and contaminants (where possible) must be conducted in controlled areas;
- Ensure the timeous clean-up of any spills;
- Implement a waste management system for all waste streams present; and
- Investigate any third-party claims of pollution or contamination as a result of the project activities.

9 MONITORING AND AUDITING

Effective monitoring and auditing are essential components of this Environmental Management Programme (EMPr), ensuring that all impact management actions are properly implemented and maintained throughout the project life cycle. This section outlines the method of monitoring the implementation of the impact management actions, the frequency of monitoring the implementation of the impact management actions, the mechanism for monitoring compliance with the impact management actions, and a program for reporting on compliance. Together, these elements provide a structured approach to safeguarding public health and the environment, enabling timely identification of issues and facilitating continuous improvement in environmental performance.

The sub-sections below set out the requirements for compliance monitoring, auditing and reporting as well as the required environmental monitoring necessary to quantify and verify the impact on the environment.

9.1 AUDITING AND REPORTING PROCEDURES

Reporting procedures must be developed at the start of the project, for conveying information from the compliance monitoring activities and to ensure that management is able to take rapid corrective action should certain thresholds be exceeded. Different reporting procedures may include:

- Inspections;
- Accidents and emergencies;
- Measuring performance indicators and interpreting and acting on the indicators;
- Records of monitoring activities to test the effectiveness of mitigation measures and impact controls, as well as for compliance auditing purposes; and
- Training programmes and evidence of appropriate levels/amount of skills/capacities created.

All monitoring and auditing must be accompanied by applicable records and evidence (e.g. delivery slips, photographic records, etc.). All reports must be retained and made available for inspection by the Applicant, the IEA, the ECO and /or the Relevant Competent Authorities. All reports shall be signed by the relevant parties to ensure accountability. The Applicant must use the audit report findings to continually ensure that environmental protection measures are working effectively through a system of self-checking. The EMPr should be viewed as a dynamic document aimed at continual environmental performance improvement. The following control documents and cadence must be maintained and presented for Audit:

- **Documentation kept on site:** record of complaints; record of emergencies and incidents.
- **Complaint register governance:** numbered pages, tabled at monthly meetings, available to authorities upon request, includes action taken; close-out within 28 days.
- **Internal performance assessment (operational alignment):** monitor compliance ongoing; assess performance monthly initially then annually; compile periodic performance assessment reports and use findings to improve controls.
- Up-to-date emergency contact list posted at relevant locations

Table 5 stipulates the compliance monitoring and auditing obligations for the relevant development activity phases.

Table 5: Compliance Monitoring[3]

Activity Phase	Audit Deliverable	Description	Responsible Party	Frequency
Construction Phase	Environmental Diary:	These reports must be prepared by the contractors' EO and must aim to monitor and report on day-to-day activities so as to ensure compliance with the relevant authorisations, licences and permits, the approved EMPr, and environmental method statements.	CEO	Weekly
	Monthly Compliance Reports (CEO):	These reports must be prepared by the contractors' CEO and must aim to provide a concise monthly performance report, including copies of relevant documents (e.g. waste manifests, incident registers, consultation registers, etc).	CEO	Monthly
	Compliance Audit Reports:	The ECO must compile compliance reports (audits) which are to be submitted to the Applicant for review and correction of non-compliance issues. It is the responsibility of the ECO to report any non-compliance, which is not correctly rectified. Depending on the outcome of the authorisation processes it may be a requirement to submit these to the relevant authorities. These compliance audits will comply with the requirements of Appendix 7 of the EIA Regulations.	ECO	Monthly
	Regulation 34 Environmental Audits:	Compiled by the appointed IEA. These compliance audits will comply with the requirements of Regulation 34 and Appendix 7 of the EIA Regulations and must be undertaken at the frequencies specified in the EA, this EMPr, or every 5 years (where not otherwise specified).	IEA	Bi-annually
Operations	Regulation 34 Environmental Audits:	Compiled by the appointed IEA. These compliance audits will comply with the requirements of Regulation 34 and Appendix 7 of the EIA Regulations and must be undertaken at the frequencies specified in the EA, this EMPr, or every 5 years (where not otherwise specified).	IEA	Annually

[3] In instances where the issued EA audit requirements conflict with those presented in this EMPr, the EA requirements will take precedence.

9.2 ENVIRONMENTAL MONITORING

The purpose of monitoring is not merely to collect data, but to provide information necessary to make informed decisions on managing and mitigating potential impacts. Monitoring therefore serves the following functions:

- Serve as early warning system to detect any potential negative impacts;
- To provide information to feedback into management controls to avoid, prevent or minimise potential negative impacts;
- Provide quantitative data that can serve as evidence for the presence of negative impacts or the lack thereof;
- Allows for trending, modelling and prediction of future conditions or potential impacts;

9.2.1 STACK EMISSIONS MONITORING (VCN FURNACE)

The AIR recommends that stack emissions be measured once the facility is operational to verify the pollutants and emission concentrations emitted from the VCN Furnace process, and to confirm compliance with MES. The AIR identifies the key pollutants of concern for the VCN Furnace assessment as PM, SO_2, NO_2 (as NOx), and NH_3, and explicitly references MES limits applicable to the VCN Furnace listed activities (Subcategory 4.1 and 4.18). Therefore, the EMPr requires: Post commissioning stack emissions testing for the VCN Furnace stack to verify these pollutants and demonstrate MES compliance, with results retained on site and incorporated into compliance reporting.

NOTE: where the AEL requires alternative testing and monitoring then the AEL requirements shall take precedence.

9.2.2 AMBIENT AIR QUALITY AND BASELINE CONTEXT

The AIR notes that baseline ambient air quality information for the area was taken from the SAWS-managed eMalahleni Air Quality Monitoring Station (AQMS) (for SO_2, NO_2, PM_{10} and $PM_{2.5}$), and that data availability over 2023–2024 was poor, with PM_{10} and $PM_{2.5}$ exceedances of NAAQS recorded in 2023.

Accordingly, the EMPr monitoring programme should:

Track and reference available AQMS trend information where applicable for contextualising complaints and observed site conditions (noting the limitations in availability highlighted in the AIR).

Use the project's complaint and inspection records as the primary operational "early warning" system for nuisance impacts.

9.2.3 DUST DEPOSITION (DUSTFALL) AND NUISANCE RISK

The AIR assesses dust deposition rates with reference to the National Dust Control Regulations (NDCR) and includes dustfall as an assessment criterion. Dustfall monitoring must be implemented if required by the AEL/authority, or where complaint trends indicate the need to verify nuisance impacts. Table 6 provides a summary breakdown of the environmental monitoring requirements for this project.

9.2.4 STACK EMISSIONS COMPLIANCE MONITORING (VCN FURNACE)

The AIR recommends that **stack emissions be measured once the facility is operational** to verify the pollutants and emission concentrations emitted from the VCN Furnace process, and to confirm compliance with MES. The AIR identifies the key pollutants of concern for the VCN Furnace assessment as **PM, SO_2, NO_2 (as NOx), and NH_3**, and explicitly references MES limits applicable to the VCN Furnace listed activities (Subcategory 4.1 and 4.18). Therefore, the EMPr requires: Post-commissioning stack emissions testing for the VCN Furnace stack to verify these pollutants and demonstrate MES compliance, with results retained on site and incorporated into compliance reporting.

NOTE: where the AEL requires alternative testing and monitoring then the AEL requirements shall take precedence.

9.2.5 AMBIENT AIR QUALITY AND BASELINE CONTEXT

The AIR notes that baseline ambient air quality information for the area was taken from the **SAWS-managed eMalahleni Air Quality Monitoring Station (AQMS)** (for SO_2, NO_2, PM_{10} and $PM_{2.5}$), and that data availability over 2023–2024 was poor, with PM_{10} and $PM_{2.5}$ exceedances of NAAQS recorded in 2023. Accordingly, the EMPr monitoring programme should:

- Track and reference available AQMS trend information where applicable for contextualising complaints and observed site conditions (noting the limitations in availability highlighted in the AIR).
- Use the project's complaint and inspection records as the primary operational "early warning" system for nuisance impacts.

9.2.6 DUST DEPOSITION (DUSTFALL) AND NUISANCE RISK

The AIR assesses dust deposition rates with reference to the National Dust Control Regulations (NDCR) and includes dustfall as an assessment criterion. Dustfall monitoring must be implemented if required by the AEL/authority, or where complaint trends indicate the need to verify nuisance impacts.

Table 6: Environmental Monitoring Plan.

Phase	Activity	Functional Requirements	Performance Indicator/ Target	Roles and Responsibilities	Frequency	Reporting Mechanism
Commissioning / Early Operation	Stack emissions testing	Conduct stack emissions measurement once the VCN Furnace is operational to verify pollutants and emission concentrations; retain certificates and results for audits. Emissions testing to ensure compliance with MES and AEL Requirements.	Verified emissions dataset for key pollutants of concern (PM, SO_2, NO_2/NOx, NH_3) demonstrating compliance with applicable MES/AEL limits.	• CharTech appoints competent emissions testing provider; • Environmental Officer compiles; • ECO reviews for audit readiness. • IEA Reports on compliance	• Once after commissioning / start-up; • Thereafter as per AEL.	• Stack test report + certificates filed on site; • Summary included in compliance reporting and audits.
Operations	AEL/MES compliance tracking	Maintain compliance evidence, including stack test results, any licence monitoring obligations, and corrective actions where needed.	• No exceedances of applicable AEL/MES emission limits; • Corrective actions implemented and closed where required.	• Environmental Officer; • ECO oversight; • IEA during formal audits.	• Per AEL; • Evidence collated routinely.	• Compliance file and audit reports.

Phase	Activity	Functional Requirements	Performance Indicator/ Target	Roles and Responsibilities	Frequency	Reporting Mechanism
Construction / Installation and Operations	Air quality complaints / nuisance response	• Maintain complaints register; • Investigate and respond; • Implement corrective actions; • Close-out within required timeframe.	• Complaints responded to and closed out within timeframe; • Repeat complaints trigger investigation and (where warranted/required) targeted monitoring.	• Environmental Officer maintains register; • ECO verifies close-out and effectiveness.	• Ongoing; • Review at routine meetings.	• Complaints register entries + close-out documentation; • Trends included in compliance reports.
Construction and Operations (if triggered)	Dustfall monitoring (NDCR context)	Implement dust deposition monitoring where required by licence/authority or where complaint trends indicate need to verify nuisance impacts.	• Dustfall results contextualised against NDCR framework; • Corrective actions implemented if needed.	• CharTech appoints competent monitoring provider; Environmental Officer manages results; • ECO oversight.	Triggered / as required	Monitoring results included in compliance reports and audits.
Construction and Operations (if triggered)	Environmental Noise	If required by EA/authority or triggered by repeat complaints/sensitivity:	• Demonstrate that noise does not constitute "disturbing noise" (i.e., does not	• CharTech / Contractor Environmental Officer to initiate and manage monitoring; suitably qualified noise specialist	Triggered / as required: when required by EA/authority OR when noise	Noise monitoring report (incl. methodology, locations, results, interpretation) +

Phase	Activity	Functional Requirements	Performance Indicator/ Target	Roles and Responsibilities	Frequency	Reporting Mechanism
		• Undertake monitoring using SANS 10103:2008 measurement/rating approach and SANS 10328:2008 assessment method. • Where measurements are used to establish ambient levels for "disturbing noise" considerations, ensure ambient is measured over ≥10 minutes at a measuring point (in absence of alleged disturbing noise).	exceed zone sound level; or if no zone sound level exists, does not exceed ambient at the measuring point by ≥7 dBA) and/or demonstrate compliance with applicable SANS-based rating criteria used by authorities/specialists.	to conduct monitoring/interpretation where required; ECO to verify close-out actions and evidence. (DFFE protocol expects specialist-led assessment when required.)	complaints indicate possible disturbing noise OR where screening/protocol indicates a noise assessment is required.	instrument calibration evidence retained on site; link outcomes to complaints register and corrective actions in compliance reporting/audits.
Operations (contextual)	Ambient AQMS trend review	Use available AQMS data context for regional trends and complaint investigation (recognising data availability	• Contextual understanding documented in complaint	Environmental Officer.	Periodic (aligned to reporting cycles)	• Referenced in compliance reporting where relevant.

Phase	Activity	Functional Requirements	Performance Indicator/ Target	Roles and Responsibilities	Frequency	Reporting Mechanism
	(external context)	limitations highlighted in AIR).	investigations where relevant.			
Construction & Operation	Surface water infrastructure integrity (stormwater controls)	• Visual inspection of stormwater containment and surface water management structures (e.g., drains, berms, trenches, inlets/outfalls, attenuation/sedimentation features where present) to confirm integrity and performance. • Keep stormwater infrastructure clear of debris and check for erosion, blockages, low points/damming and any signs of failure. • Monitor water levels in impoundments to ensure	• Infrastructure remains fit-for-purpose, free-draining and functional; • No uncontrolled erosion or sediment-laden discharge attributable to site infrastructure condition; • Corrective actions logged and close-out evidenced. • Levels remain within marked operational limits; • No overflow/incident	• Site Manager / appointed responsible person (CharTech) conducts inspections and initiates maintenance; • Environmental Officer/CEO maintains records; • ECO verifies adequacy and close-out during audits.	• Monthly routine inspection • Directly after rainfall events.	• Inspection checklist and photo log; • Maintenance/repair records; • Issues and close-out tracked in compliance file and ECO audit reports.

Phase	Activity	Functional Requirements	Performance Indicator/ Target	Roles and Responsibilities	Frequency	Reporting Mechanism
		they do not exceed expected operational levels; • Check levels regularly and specifically after storm events where relevant.	attributable to inadequate level management; • Exceedances trigger corrective action and reporting.			
	Public complaints	Formal public grievance mechanism. Access to grievance mechanism publicly advertised.	Up to date grievance register and complaints addressed and responded to within reasonable timeline.	Applicant	On-going	Included in ECO/IEA reports.

10 IMPACT MANAGEMENT OUTCOMES AND ACTIONS

This section captures impact management outcomes and actions that are applicable to specific project activities. For each identified aspect or activity, a set of prescribed impact management outcomes and associated actions have been identified. It is important to distinguish in this EMPr between the Impact Management Outcomes and the Impact Management Actions.

- Impact Management Outcomes: These are the desired end states or results that must be achieved to manage, mitigate, or enhance environmental impacts identified. They describe what success looks like in terms of environmental performance (e.g., "No contamination of surface water resources during construction"). These outcomes are measurable and auditable, forming the basis for compliance monitoring and reporting.
- Impact Management Actions: These are the specific measures, tasks, or interventions that must be implemented to achieve the stated impact management outcomes. They detail how the outcomes will be achieved, including operational controls, procedures, and responsibilities (e.g., "Install silt fences and sediment traps along drainage lines before earthworks commence").

Table 7 presents the impact management outcomes and actions applicable to this project, and to which the project must comply.

Table 7: Environmental management outcomes and impacts.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
10.1. Air Quality Management Impact management outcomes: • Prevent further deterioration of ambient air quality at sensitive receptors due to this project. • Minimise visible dust plumes crossing the site boundary. • Minimize fugitive dust from earthworks, unpaved roads, material handling, and stockpiles. • Control exhaust emissions from construction equipment and vehicles (mobile sources). • Prevent nuisance dust, odour and smoke. • Control open burning. • Identify, monitor, and manage hazardous air pollutants. • Control and minimise the release of Greenhouse Gas Emissions. • Implement monitoring and responsive communication to address air-quality complaints promptly.								
GA01	Phase earthworks, if any, to minimize exposed areas (from a temporal and spatial perspective);	C	Facility preparations	DPM	Prior construction	ECO	Monthly	ECO Reports IEA Report
GA02	Exposed areas or material susceptible to excessive entrainment must be stabilized with water, mulch, soil binders, or other control method.	C, O	Facility preparations Material handling	P, DPM	Prior construction	ECO	Monthly (C) Annual (O)	ECO Reports IEA Report
GA03	Removal of vegetation (if required) must be avoided until such time as soil stripping is required and similarly exposed surfaces outside of the development footprint must be re-vegetated or stabilised as soon as is practically possible.	C	Facility preparations	DPM	Prior construction	ECO	Monthly	ECO Reports IEA Report
GA04	Take all reasonable measures to minimise the generation of dust as a result of construction activities to the satisfaction of the ECO.	C	Facility preparations	DPM	Prior construction	ECO	Monthly	ECO Reports IEA Report
GA05	Control dust entrainment on unpaved roads (e.g. watering, speed limits, and surface treatments) to prevent impact to identified receptors.	C, O	Construction and	DPM, CEO	As and when required	ECO	Monthly	ECO Reports IEA Report

[4]Project development phases abbreviated as: Planning and Design (PD); Pre-construction (PC); Construction (C); Operation (O); Decommissioning, Rehabilitation and Closure (D); Post Closure (CL).

[5]Responsible parties abbreviated as: Proponent (P), Developers Project Manager (DPM), Environmental Control Officer (ECO), Contractor (C), Contractor Environmental Officer (CEO), Independent Auditor (IA).

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
			operational vehicles,					
GA06	Manage stockpiles to prevent excessive dust: locate in sheltered areas, cover, seed, or orient away from receptors.	C	Facility preparations	DPM	As and when required	ECO	Monthly	ECO Reports IEA Report
GA07	Transport materials susceptible to entrainment in covered/tarped trucks; and dampen loads if necessary.	C, O	Construction and operational vehicles,	DPM, CEO	As and when required	ECO	Monthly	ECO Reports IEA Report
GA08	Prevent track-out of materials (soil, sediments, etc) onto public roads (e.g. using stabilized exits, wheel wash stations, and street sweeping).	C, O	Construction and operational vehicles,	DPM, CEO	As and when required	ECO	Monthly	ECO Reports IEA Report
GA09	Vehicle speeds must be kept slow and along unsurfaced roads or when traversing unconsolidated and non-vegetated areas, in order to minimise dust creation.	C, O	Construction and operational vehicles,	DPM, CEO	As and when required	ECO	Monthly	ECO Reports IEA Report
GA10	Conduct daily visual inspections during dry/windy periods; escalate and supplement controls if dust observed; deploy Particulate Material monitors if warranted or directed by the ECO. If necessary cease dust generating activities during windy conditions as instructed by ECO.	C, O	Materials handling and vehicle movements.	DPM, CEO	On-going- daily.	ECO	Monthly	ECO Reports IEA Report
GA11	Community or receptor complaints related to dust must be investigated and addressed as soon as possible. Should repeat complaints be logged, then targeted dust (PM and/or fallout dust) monitoring must be initiated, and project controls adapted to comply with applicable dust control regulations, standards and thresholds.	C, O	Materials handling and vehicle movements	P, DPM, CEO	Triggered on receipt of complaint.	ECO	Monthly	ECO Reports IEA Report
GA12	Maintain combustion vehicles and equipment to reduce exhaust emissions; enforce an anti-idling policy.	C, O	Combustion engine vehicle operations	P, DPM, CEO	On-going- relevant equipment service intervals.	CEO ECO	Monthly	CEO Reports IEA Report
GA13	Survey for asbestos/lead before any structural demolition; use licensed removal.	PC, C	Facility preparations.	DPM, CEO	Prior to any demolitions	CEO ECO	Monthly	CEO Reports

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GA14	Prohibit open burning of wastes and manage wastes to prevent odour and smoke.	C, O, D	All construction and operations-waste management	P, CEO	On-going	P, CEO, ECO	Monthly	CEO/ ECO Reports IEA Report
GA15	To reduce GHG emissions, where feasible use renewable energy sources and energy-efficient machinery and equipment. Implement regular maintenance schedules to ensure optimal fuel efficiency.	O	Facility electrical supply	P	On-going during operations.	ECO, IEA	Monthly (C), Annual (O)	ECO Reports IEA Report
GA16	Fuel usage should be recorded for GHG emissions reporting.	C, O	Fossil fuel usage.	P, DPM, CEO	On-going during construction/ operations	ECO, IEA	Monthly (C), Annual (O)	N/A
SA01	Measure stack emissions once the facility is operational to verify pollutants and emission concentrations from the VCN process	O	Commissioning / start-up of VCN furnace	P	Once operational (post-commissioning)	ECO / IA	Once (then align to AEL conditions when issued)	Stack emissions test report confirming measured pollutants and concentrations.
SA02	Stack emissions must comply with the emission limits stipulated in the MES (new plant MES) applicable to the VCN furnace listed activities.	O	Routine operations (point source emissions compliance)	P	Continuous (operational life)	ECO / IA	As per AEL / audit cycle	Demonstrated MES compliance (stack test results; compliance evidence pack).
SA03	Operate VCN furnace stack with baghouse abatement (identified as the control technology for the VCN furnace stack).	PD, O	Emissions abatement / control equipment operation	P	Prior to commissioning and throughout operation	CEO / ECO	Routine inspections	• Baghouse installed and operational; • Maintenance/inspection records; • No abnormal visible emissions.
SA04	Receive briquettes in sealed bags and store indoors on impermeable surface.	O	Raw material receiving, storage and	P	Continuous	CEO / ECO	Routine inspections	Storage/handling consistent with sealed indoor

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
			internal handling					approach; housekeeping records; absence of open stockpiling.
SA05	Movements of raw materials to be done via paved/concrete/impermeable surfaces.	O	Raw material receiving, storage and internal handling	P	Continuous	CEO / ECO	Routine inspections	Storage/handling consistent with sealed indoor approach; housekeeping records; absence of open stockpiling.
SA07	Discharge dust minimisation design: sealed automated rotator empties crucible into skip with <0.5 m drop and double seal at outlet.	PD, O	• Design control. • Controlled cooling, discharge and transfer to skip	P	Design; Before start-up; maintain throughout operation	CEO / ECO	• Pre-commencement; • Routine inspections	Evidence of discharge configuration (<0.5 m drop, double seal); inspection records; low/no dusting observed at discharge.
SA08	Packaging and internal transfers: pack cooled VCN in sealed bags (<20 kg), palletise; internal transfers occur on concrete paved surfaces.	PD, O	Packing and dispatch (internal logistics)	P	Continuous	CEO / ECO	• Pre-commencement; • Routine inspections	Packaging method as specified; paved internal movement routes maintained; inspection records.

10.2. Waste Management

Impact management outcomes:

- Prevent pollution and health risks by ensuring proper segregation, handling, storage, and disposal of all waste streams.
- Minimize waste generation through source reduction, reuse, and recycling of materials.
- Ensure safe handling and disposal of hazardous waste (e.g., oils, solvents, asbestos) in compliance with regulations.
- Maintain site cleanliness and prevent littering to reduce safety hazards and visual impacts.
- Prevent contamination of soil and water from waste storage and handling areas.
- Track and document waste streams for accountability and regulatory compliance.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
• Create workforce awareness in waste management and minimization practices through training and supervision.								
GW01	Develop and implement a Waste Management Plan (WMP) covering waste hierarchy, segregation, storage, transport, and disposal routes. The WMP must incorporate all waste related management actions from this EMPr. The WMP must be reviewed and approved by the ECO.	PC, C, O, D	All phases and activities: site establishment, construction/installation, operation, decommissioning	C (draft), P/DPM (approve & implement), CEO (Implement)	Before commencement of works and prior to operational start-up; update as changes occur	CEO/ ECO / IEA	Review before commencement; then annual review or after process changes	Approved WMP available and implemented (associated records). ECO Reports. IEA Report.
GW02	Ensure designated waste handling and storage areas. These areas must have adequate stormwater systems to prevent ponding or transport of wastes.	PC, C, O, D	Waste management areas; Stormwater infrastructure	C, P	Before waste is generated on site; maintain throughout.	CEO, ECO	Weekly (C), monthly (O)	Waste area demarcated; bunding/covering in place; no evidence of runoff contamination; inspection checklist + photos. ECO Reports. IEA Report.
GW03	No collection or storage of waste outside of dedicated areas or receptacles.	C, O, D	All waste generation points	C, P	Continuous	CEO, ECO	Weekly (C); monthly (O, D)	Housekeeping inspections; zero uncontrolled waste accumulations; corrective actions closed out. ECO Reports. IEA Report.
GW04	No littering.	C, O, D	Site housekeeping	C, CEO, P	Continuous	CEO, ECO	Weekly (C); monthly (O, D)	Housekeeping inspections; corrective actions logged and closed out. ECO Reports. IEA Report.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GW05	Waste storage and disposal bins/drums should be emptied on regular bases and must not overflow. The drums should be water and scavenger proof. Precautions shall be taken to prevent any refuse from spreading on and from the site.	C, O	General waste handling	C, CEO, P	Continuous	CEO, ECO	Weekly (C); monthly (O, D)	No overflowing bins; waste collection schedule; photo evidence. ECO Reports. IEA Report.
GW06	Hazardous waste management: store in covered and bunded areas; labelled containers; keep MSDS where applicable; dispose via licensed haulers at licenced disposal facilities.	C, O, D	Hazardous material management (e.g. oils, chemicals, contaminated materials, spent filters/absorbents)	C (C), P (O), CEO (C)	Before hazardous materials are generated; continuous management.	CEO, ECO, IEA	Weekly (C); Monthly (C); Annual (O)	MSDS available; bunding compliant; labelled containers; disposal certificates/manifests retained. CEO Reports. ECO Reports. IEA Report.
GW07	Segregate waste streams at source (e.g., inert, recyclable, hazardous); provide labelled containers/skips.	C, O, D	All waste generation points	C, CEO, P	From day 1 of activities	CEO, ECO, IEA	Weekly (C); Monthly (C); Annual (O)	Segregation signage; bin labelling; inspection records; reduced mixed waste. CEO Reports. ECO Reports. IEA Report.
GW08	Minimize waste generation: order materials accurately; reuse formwork where practical; return packaging; design for deconstruction.	PD, C, O	Procurement; construction methods; maintenance	P / C	During planning and throughout implementation	DPM, ECO	Monthly	Purchase/control records; reduced disposal volumes; documented reuse/returns.
GW09	Recycle and recover construction and demolition materials (e.g. concrete, metals, timber) via approved facilities; maintain receipts.	C, D	Construction/installation waste; decommissioning waste	C, CEO,	During works and demobilisation	CEO, ECO	Monthly	Recycling receipts; disposal certificates; waste register showing diverted volumes. CEO Reports.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								ECO Reports. IEA Report.
GW10	Prevent contamination: impermeable surfaces for leachable waste storage; cover skips; secondary containment for liquids.	PC, C, O, D	Waste yard design and operations	P, C	Prior to use; continuous	CEO, ECO	Weekly (C); Monthly (C); Annual (O)	No stained or contaminated soils; bund integrity; cover compliance; inspection photos. CEO Reports. ECO Reports. IEA Report.
GW11	Track and report waste: maintain registers of waste quantities generated, stored, and disposed. Obtain and keep waste disposal certificates and manifests.	C, O, D	All waste streams	P, DPM, CEO	Commencement to close-out	CEO, ECO, IA	Weekly (C); Monthly (C); Annual (O)	Waste register updated; manifests & safe disposal certificates filed; traceable chain-of-custody. CEO Reports. ECO Reports. IEA Report.
GW12	Train workforce and subcontractors on waste segregation, hazardous waste handling, and spill response.	C, O	Induction; toolbox talks	C, P	Before work starts + refresh as needed	ECO	Induction + periodic refresh	Training attendance registers; toolbox talk records; improved compliance trends. IEA Report.
GW13	Emergency response for waste incidents: spill kits available; procedures for cleanup and reporting.	C, O	Waste storage areas; refuelling; handling of liquids	C, P, CEO	Before hazardous activities commence; continuous	ECO, IA	Monthly (C); Annual (O)	Spill kits present & stocked; incident records; cleanup evidence; disposal records for contaminated material. ECO Reports. IEA Report.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GW14	Prohibit on-site disposal unless specifically licenced and approved by the ECO/ IEA.	C, O, D	Disposal practices	C, P, CEO	Continuous	ECO, IEA	Monthly (C); Annual (O)	No evidence of informal disposal; disposal certificates; audit findings.
GW15	All wastes generated must be stored and disposed of according to relevant legal requirements.	C, O, D	All waste streams	C, P, CEO	Continuous	ECO, IEA	Monthly (C); Annual (O)	Compliance file includes transporter details and disposal proof; records complete and traceable. ECO Reports. IEA Report.
SW01	Collect baghouse dust into sealed bags/containers to prevent fugitive dust release during emptying, handling and storage.	O	Baghouse hopper emptying; bagging; internal transport to storage	P	Each emptying event; continuous operational control	ECO, IEA	Each event + monthly inspections	Sealed bags used; no visible dust releases; housekeeping/inspection logs. ECO Reports. IEA Report.
SW02	Store baghouse dust temporarily in a designated, covered, secure area and clearly demarcate as controlled waste storage.	O	Temporary storage management	P	Continuous	ECO, IEA	Monthly Annual	Designated storage area; bags intact; no spillages; inspection photos/logs. ECO Reports. IEA Report.
SW03	Baghouse dust must either be recycled lawfully of disposed of via licensed waste contractor to a licensed facility. Cradle-to-grave documentation (register, manifests, disposal certificates) to be retained.	O	Off-site transport and disposal (if disposal route is used)	P	As required (periodic removal)	ECO, IEA	Per removal + monthly register update Annual	Manifests/certificates retained; register updated; contractor and facility details recorded. ECO Reports. IEA Report.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
10.3. Health and Safety Management Impact management outcomes: • Prevent uncontrolled fire hazard. • Prevention or minimisation of health and safety risks to employees and general public. • Minimise the risk of injury, harm or complaints.								
GHS01	All contractors and sub-contractors must comply with their obligations under the relevant legislative frameworks (e.g. Occupational Health and Safety Act; Construction Regulations).	C, O, D	All contractor and subcontractor activities (site establishment, construction/installation, operations, decommissioning works)	P, C	Continuous – from mobilisation through demobilisation	CEO, ECO, IEA	Construction: Monthly CEO report + Monthly ECO report; Bi-annual IEA audit; Operations: Annual IEA report (plus routine site checks as per OHS system)	Legal compliance file in place; OHS appointments; evidence of compliance (inductions, permits, inspections); audit findings closed out. ECO Reports. IEA Report.
GHS02	An Occupational Health and Safety (OHS) Management Plan for construction will be developed. Specific measures must include but are not limited to: Requirement for work / task H&S Risk Assessments to be developed and approved. H&S Roles and responsibilities, including safety managers, safety officers, first aiders, etc. Installation of barriers, warning tape or netting, signage, a watchperson, and adequate lighting; use of appropriate PPE at all times; provision of adequate drinking water and sanitation; provision of reverse alarms, lights, and all other applicable safety devices for plant and equipment; workforce H&S induction on the project site safety requirements prior to commencement of activities.	PC, C	Construction planning, mobilisation, site establishment, active construction	C, DPM	Before construction starts; maintain and update throughout construction	CEO, ECO, IEA	Monthly Bi-annual	Approved OHS Plan available on site; role appointments; induction registers; PPE compliance; barricading/signage in place; plant safety checks recorded. ECO Reports. IEA Report.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GHS03	Create project construction OHS risk assessments using a suitable methodology to identify hazards, risks, and controls following the hierarchy of controls. Supplement these with detailed job or task-specific assessments, updating them whenever tasks change or after any accident, incident, or near miss.	PC, C	Construction task planning and execution	C, CEO	Before each relevant task/activity; update whenever conditions change or after incidents	CEO, ECO, IEA	Monthly Bi-annual	Risk assessments on file for relevant tasks; updates recorded; incident investigations completed and controls updated; evidence in monthly H&S reporting. ECO Reports. IEA Report.
GHS04	The following measures will be taken to reduce the risk of fires: No open or unattended fires are permitted on site. Adequate fire breaks must be maintained. Designated smoking areas must be located in areas where fire hazard is regarded as insignificant. Every possible precaution shall therefore be taken when working with potential flammable equipment or liquids near potential sources of combustion. Such precautions include having an approved fire extinguisher available at the site of any such activities. The contractor shall ensure that there is always basic firefighting equipment available on site and the relevant staff are designated and trained in their use. Fire events must be specifically addressed in the EPRP (see section 8.11). The contractor or contractors (as determined by the DPM) shall appoint a member of his staff to be responsible for the installation and inspection of firefighting equipment; and the contractor is to ensure that he/she has the contact details of the nearest fire station in case of an emergency. The local Fire Protection Agency (FPA) must receive prior notice of construction activities.	PC, C, O	Fire prevention, hot work, flammables storage/handling	P, C, CEO	Before high-risk activities commence; ongoing	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	No open fires observed; equipment present and in-date; inspection logs; FPA notification record (where applicable); drills conducted; incident register shows effective response. ECO Reports. IEA Report.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GHS05	All staff must receive training on the risks associated with communicable diseases, HIV and AIDS, Tuberculosis, or other relevant.	PC, C, O	Induction and workforce management	P, C	Prior to work start (induction) and refresher intervals	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Training attendance registers; toolbox talk records; awareness materials available. ECO Reports. IEA Report.
GHS06	Unauthorised access to the construction areas and specifically high-risk areas (excavations, scaffolding, material stockpiles, hazardous material storage areas, etc) must be controlled.	C, O	Access control, fencing, signage and security	P, C, CEO	From mobilisation; continuous	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Access controls in place; visitor register; no public access incidents; corrective actions logged. ECO Reports. IEA Report.
GHS07	A grievance mechanism aimed at receiving and resolving environmental and social issues must be developed and implemented. This must as a minimum include: Dedicated roles and responsibilities; Must be accessible to community and workers (consider physical access, literacy, languages, etc); Must have a clear issue tracking mechanism and target resolution timelines. Tracking and logging of all receipts and responses. Must be publicised to project affected communities and workers. The Grievance mechanism must be made available for inspection by the ECO and IEA.	PC, C, O	Stakeholder engagement and issue management	P, DPM, CEO	Before construction starts; maintain throughout project	DPM, CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Grievance procedure available; logs maintained; responses within timelines; close-out records. ECO Reports. IEA Report.
GHS08	No loitering by workers in areas outside of and adjacent to the designed construction areas.	C	Workforce conduct management	C, CEO	Continuous during construction	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	No loitering observed; disciplinary records if applicable; complaints register trend.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								ECO Reports. IEA Report.
GHS09	Workers will not be allowed to keep or use alcohol, recreational drugs, traditional or modern weapons, snares or otherwise dangerous objects onsite, or to enter the sites while under the influence of alcohol or drugs.	C, O	Workforce conduct and site security	C, P, CEO	Continuous	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Site rules posted; induction covers prohibitions; incident register; enforcement evidence. ECO Reports. IEA Report.
GHS10	An Emergency Preparedness and Response Plan must be developed and implemented (refer to Section 8.11)	PC, C, O	Emergency preparedness for fire, spills, accidents, and other emergencies	C (C), P(O).	Before commencement; maintain and drill throughout	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	EPRP available; emergency contacts posted; drill records; incident response reports and corrective actions. ECO Reports. IEA Report.
SHS01	Permit-to-work systems shall be implemented for high-risk activities (e.g. hot works, work at heights, lock-out/tag-out).	C, O	Construction planning, active construction	P, C				HSE file records; Permits; Tags
SHS02	Provide training and PPE requirements for staff handling baghouse dust, including spill response; retain training records.	O	Induction/tool box talks; routine operations	P	Before duties commence; refresh periodically	ECO, IEA	Induction + periodic refresh Annual	Training attendance registers; no repeated handling non-conformances. ECO Reports. IEA Report.
10.4. Noise Management Impact management outcomes: • Prevent exceedance of applicable noise limits at sensitive receptors. • Minimize community disturbance by scheduling noisy activities and using engineering controls.								

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
• Control noise at source through equipment selection, maintenance, and mufflers. • Implement monitoring and complaint response mechanisms to maintain compliance and community trust. • Protect workers from occupational noise exposure per OHS standards (handled under H&S section).								
GN01	Monitor and respond to any complaints related to noise through the project grievance mechanism. Should repeat complaints be logged, then targeted noise monitoring must be initiated, and project controls adapted to comply with applicable noise control regulations, standards and thresholds. This should be implemented in consultation with the ECO.	C, O	Complaint response; targeted monitoring if triggered; adaptive mitigation	P, DPM, CEO	From start of construction through operations (where applicable)	ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Grievance/complaints register maintained; response and close-out evidence; targeted monitoring initiated when triggers met; corrective actions implemented and verified. ECO Reports. IEA Report.
GN02	Select low-noise equipment where feasible; fit silencers/mufflers on engines and compressors; maintain equipment to spec; where practical, sources of significant noise should be enclosed.	PC, C, O	Procurement/ specification; equipment operation and maintenance	C (C), P (O)	Before procurement/mobilisation; maintain during use	ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Equipment maintenance logs; mufflers/silencers fitted and functional; enclosure/barriers in place where practical; reduced complaint trend; inspection evidence. ECO Reports. IEA Report.
GN03	Regular and effective maintenance of equipment	C, O	Plant and equipment maintenance programme	C (C), P (O)	Continuous; as per OEM schedules	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Maintenance logs; defect reports and close-out; noisy equipment repaired/replaced; audit evidence. ECO Reports.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								IEA Report.
10.5. Social Management Impact management outcomes: • Avoid, minimize, and manage adverse social impacts on local communities, including health, safety, and security risks. • Reduce the impact of change to sense of place. • Promote effective stakeholder engagement and maintain transparent communication throughout the project lifecycle. • Implement a functional grievance mechanism for workers and communities to address concerns promptly. • Support local socio-economic benefits through local hiring, skills transfer and procurement of good and services from local enterprises • Promote gender equality and women's empowerment by ensuring equitable access to employment, training, and participation in decision-making processes. • Protect and promote the rights and well-being of vulnerable groups (including the elderly, persons with disabilities, youth, and female-headed households) by ensuring fair access to project opportunities and avoiding disproportionate burdens. • Protect cultural heritage, sacred sites, and traditional practices through early identification and appropriate management measures. • Enhance community health and well-being through proactive measures addressing communicable diseases, substance abuse, and social pathologies.								
GS01	The Proponent must establish and facilitate (or continue if such is already in effect) a Community Liaison Forum (CLF). This should include all directly affected project affected persons as a minimum. The CLF must meet on a regular basis to present on the following: Project progress, upcoming project activities, relevant monitoring results. The CEO will be responsible for adequate notification, facilitation, minutes and records of attendance.	PC, C, O	Stakeholder engagement; community liaison; information disclosure and meetings	P, ECO, CEO, DPM	Before construction (establish); maintain through construction and (where applicable) early operation	ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	CLF established; meeting schedule implemented; minutes and attendance registers retained; issues raised tracked and closed out. ECO Reports. IEA Report.
GS02	Prioritise local employment and procurement during all project phases. Ensure recruitment of local labour (particularly youth and women) for unskilled and semi-skilled positions. Include local businesses in the project's procurement strategy by setting preferential thresholds for local contractors (e.g. catering, security, transport, fencing). Collaborate with local municipalities, NGOs, and community structures to verify eligible beneficiaries. The recruitment and procurement policy must set realistic targets and be communicated clearly to manage expectations.	PC, C, O, D	Recruitment, labour sourcing, procurement and contractor management	P, DPM, C , CEO	Policy before recruitment/procurement begins; ongoing implementation	ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Recruitment/procurement policy on file; records of local hires and local supplier spend (where tracked); transparent communication evidence; grievances

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								managed and closed out. ECO Reports. IEA Report.
GS03	Mandatory GBV, Sexual Harassment & HIV/STI Awareness Training with Signed Code of Conduct - Before starting constructions Training covers: unacceptable behaviour, local GBV context, penalties for misconduct. Each worker signs a Code of Conduct stating zero tolerance for harassment, exploitation or relationships with minors.	PC, C	Workforce induction; code of conduct management	C, P, CEO	Before commencement; enforce throughout construction	CEO, ECO, IEA	Monthly (C), Bi-annual (C)	Training attendance registers; signed code of conduct retained; disciplinary actions for breaches; incident/grievance logs. ECO Reports. IEA Report.
GS04	Worker health awareness and protection. Adhere to the worker health and safety measures indicated in the EMPr. In addition, the following must be considered: • To mitigate the risk of increased social pathologies, the Project Developer should implement a Workforce Health and Behavioural Management Programme that includes condom distribution and regular health (HIV/AIDS, STIs) awareness campaigns; toolbox talks addressing the risks of promiscuous behaviour, substance abuse, and gender-based violence; and the development of an in-house infectious diseases' strategy. • A workforce code of conduct should be enforced to guide employee behaviour on and off site, promoting responsible conduct and positive interaction with local communities.	PC, C, O	Workforce management; health promotion; behaviour management	C, P, CEO	Before construction (plan); ongoing implementation	ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Programme evidence (materials, logs); toolbox talk records; incident/disciplinary records; reduced social pathology-related complaints. ECO Reports. IEA Report.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
SS01	A Closure and Transition Plan shall be developed, including skills development, employment referrals, and CV support.	PC, C, D	Demobilisation planning; workforce transition support; stakeholder communication	P, DPM, C	Prepare before demobilisation; implement during demobilisation/transition	ECO, IEA	Monthly (C), Bi-annual (C)	Plan on file; evidence of referrals and CV support (records); training/skills support records; reduced grievances at demobilisation. ECO Reports. IEA Report.
SS02	Transparent engagement with labour representatives/affected employees shall be undertaken, with realistic timelines communicated.	PC, C, D	Labour engagement and communication	P, DPM, C	Before workforce changes; ongoing updates	ECO, IEA	Monthly (C), Bi-annual (C)	Meeting records/communications issued; grievances reduced/managed; evidence of timely communication. ECO Reports. IEA Report
SS03	No overnight worker accommodation.	C, O	Workforce management; site camp control	P, C, CEO	Continuous	ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	No overnight accommodation observed; site rules posted; any security-only exceptions (if applicable) documented and approved; audit evidence. ECO Reports. IEA Report
10.6. Biodiversity Management Impact management outcomes: • Avoid and minimize impacts on natural habitats and species through site selection, design, and construction planning.								

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
• Control invasive alien species and prevent their introduction or spread.								
GB01	Restrict vegetation damage or clearing to imminent construction footprints or areas as approved by the ECO.	C	Vegetation clearing; earthworks; laydown areas	C, CEO	Throughout construction (prior to each clearing activity)	CEO, ECO, IEA	Monthly (C), Bi-annual (C)	Clearing confined to approved areas; pre-clearance checks recorded; no unnecessary vegetation disturbance; photos and checklists. ECO Reports. IEA Report
GB02	Collection of fuel wood and gathering of plants by the construction workforce is prohibited.	C	Workforce conduct; site rules	C, CEO	Continuous during construction	CEO, ECO, IEA	Monthly (C), Bi-annual (C)	Rules communicated; no evidence of plant collection; incident register and disciplinary records (if applicable). ECO Reports. IEA Report
GB03	Prevent introduction of invasive species by cleaning equipment prior to first use on site.	PC, C	Mobilisation of plant and equipment	C, CEO	Before first use on site; repeat if equipment sourced from infested areas	ECO, IEA	Monthly (C), Bi-annual (C)	Equipment cleaning records; inspection evidence; no new infestations attributable to equipment. ECO Reports. IEA Report
GB04	Existing and designated vehicular access and haulage routes must be used- no traversing natural areas outside of the designated construction footprint.	C, O	Vehicle movement and logistics	C, P, CEO	Continuous	CEO, ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Access map communicated; GPS/inspection evidence; no new tracks; incident/non-

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								compliance register (if breaches). ECO Reports. IEA Report.
GB05	Where pest control is required, environmentally friendly options must receive preference. Pest control must be implemented in accordance with relevant legislation.	C, O	Pest control activities	P, C, CEO	As required	ECO, IEA	Monthly (C), Bi-annual (C) Annual (O)	Pest control records; products approved; no non-target impacts reported; compliance documentation retained. ECO Reports. IEA Report.

10.7. Water Management

Impact management outcomes:

- Prevent contamination of surface water and groundwater from amongst other sediment, fuels, chemicals, and wastewater.
- Maintain natural drainage patterns and minimize alteration of hydrology.
- Control stormwater runoff to prevent erosion, flooding, and off-site sedimentation.
- Minimise the change in stormwater runoff from pre-development to post-development conditions.
- Ensure proper storage and handling of hazardous substances to avoid leaks and spills.
- Manage wastewater and concrete washout to prevent uncontrolled discharge.
- Monitor water quality and implement corrective actions where exceedances or pollution risks occur.
- Promote water conservation and efficient use during construction activities.
- Avoid encroachment into watercourses and wetlands through buffer zones and site planning.
- Implement dewatering controls to prevent erosion and turbidity in receiving waters.
- Ensure sanitary wastewater from camps and ablutions is treated before discharge.
- Prevent illegal discharge of any liquid waste into stormwater systems.
- Use environmentally safe soil binders and dust suppressants to avoid water pollution.
- Protect groundwater recharge zones from compaction and contamination.
- Ensure emergency response procedures are in place for water pollution incidents.
- Engage with local authorities and communities regarding water use and protection.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GWA01	The project site must have a functional and effective Stormwater Management System and associated plan (SWMP), in place to be implemented during construction and operational phase. The outcomes of this plan include: clean/dirty water separation; drainage and containment/treatment; pollution control facilities; divert clean water; design discharge points to avoid scour; manage contaminated stormwater/wastewater/sewage via treatment or off-site disposal.	PC, C, O	Stormwater planning; SWMP design; installation and operation of stormwater controls	P, DPM, C (engineer), ECO.	Before commencement; implement throughout construction and operations	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Approved SWMP on file; controls installed; inspection/maintenance logs; no polluted discharge; corrective actions recorded. ECO Reports. IEA Report
GWA02	No contaminated water to be discharged into the environment without relevant authorisation.	C, O	All discharges (stormwater, wastewater, dewatering)	P, C, CEO	Continuous	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	No unauthorised discharge; incident register; compliance evidence in monthly/annual reports. ECO Reports. IEA Report.
GWA03	All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, wetlands and water bodies.	C	Excavation; stockpiling; spoil management	C, CEO	During excavation and stockpiling	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Stockpiles located away from buffers; protected from erosion; no material in watercourse; inspection records. ECO Reports. IEA Report.
GWA04	Store hazardous materials and chemicals (including fuels) on impermeable surfaces with secondary containment/ bunding. Bunding to provide for at least 110% volume of the largest container/ tank, or 25% of the total volumes of fuel and fluids stored (whichever is greater).	PC, C, O	Fuel/chemical storage and handling	C (C), P (O), CEO	Before storage begins; continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Bunded storage in place; capacity compliant; MSDS available; inspection logs; no spills to soil/water. ECO Reports. IEA Report.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GWA05	The use of drip trays and mobile containment must be implemented to avoid spills of hazardous materials (e.g. fuels and oils) to the environment.	C, O	Refuelling and servicing; plant operation	C, P, CEO	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Drip trays used; spill-free refuelling; inspection records; spill kit availability. ECO Reports. IEA Report.
GWA06	Refuelling and servicing of vehicles must take place on impervious surfaces or with the use of drip trays.	C, O	Refuelling and servicing activities	C, P, CEO	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Designated refuelling areas; drip trays used; records/photos; no stained soils. ECO Reports. IEA Report
GWA07	All spillage of oil must be avoided by the use of drip trays or similar containment. Where spills occur these must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility.	C, O	Plant maintenance; spill response	C, P, CEO	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Spill response records; absorbents disposed as waste; waste manifests/certificates retained. ECO Reports. IEA Report
GWA08	All vehicle or equipment servicing to take place at a designated area on an impermeable surface to prevent release of hazardous substances to the environment.	C, O	Maintenance and servicing	C, P, CEO	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Designated servicing area; impermeable surface; inspection records; no contamination evidence. ECO Reports. IEA Report
GWA09	A Spill Response Procedure must be developed and implemented (refer to Section 8.12)	PC, C, O	Spill preparedness and response	C (C), P (O)	Before hazardous substances used; continuous	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Procedure available; staff trained; spill kit locations; incident response records.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								ECO Reports. IEA Report
GWA10	Ensure spill kits are provided and accessible in areas where hazardous substances are stored or used.	PC, C, O	Hazardous storage and use areas	C, P, CEO	Before storage/use; continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Spill kits present, stocked and accessible; inspection records; photos. ECO Reports. IEA Report
GWA11	Prevent discharge of liquid wastes into the stormwater systems.	C, O	Wastewater handling; washdown; maintenance	C, P, CEO	Continuous	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	No evidence of illegal discharge; inspections; incident register. ECO Reports. IEA Report
GWA12	Conduct all concrete mixing and matching on impervious surfaces (e.g., concrete slab, or liners) to prevent infiltration into soil or mobilisation to water resources.	C	Concrete works	C, CEO	During concrete works	CEO, ECO, IEA	Monthly (C) Bi-annual (C)	Designated batching area; liners/hardstanding in place; no cement-contaminated runoff; inspections/photos. ECO Reports. IEA Report
GWA13	Prevent the release of cement contaminated water from discharging to the environment (soil, water resources).	C	Concrete works and washdown	C, CEO	During concrete works	CEO, ECO, IEA	Monthly (C) Bi-annual (C)	Wash water contained; no runoff; inspection records; incident register. ECO Reports. IEA Report
GWA14	Prohibit discharge of wash water onto bare soil or stormwater drains.	C	Concrete truck/mixer washout	C, CEO	During concrete works	CEO, ECO, IEA	Monthly (C) Bi-annual (C)	No wash water discharge observed; designated

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								washout; inspection records. ECO Reports. IEA Report
GWA15	Conduct regular inspections for leaks, spills, and integrity of containment systems.	C, O	All hazardous storage/use areas; plant and equipment	C, P, CEO	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Inspection checklists; maintenance records; non-compliances closed out.
GWA16	Recycle or reuse water where practical and in line with relevant legal requirements. Use recycled water for dust suppression where feasible and monitor consumption.	C, O	Water use and conservation; dust suppression	C, P,	Continuous	ECO, IEA	Monthly (C) Bi-annual (C)	Records of recycled/reused water; water consumption logs; evidence of conservation practices. ECO Reports. IEA Report
GWA17	Abstraction of water from local water resources (surface or groundwater) is prohibited without relevant licences or authorisations.	PD, C, O	Water supply and abstraction	P, DPM	Before any abstraction	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	No abstraction without authorisation; licences on file if applicable; water supply records. ECO Reports. IEA Report
GWA18	Implement water conservation practices including: • Minimising water use during equipment cleaning; • Conducting regular audits of water systems; • Discussing water usage and conservation in environmental awareness training; and • Encouraging the use of grey water.	C, O	Water conservation and housekeeping	C, P	Continuous	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Water audit records; training records; reduced consumption trends where tracked; evidence of conservation measures. ECO Reports. IEA Report

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GWA19	Provide training on water management to all workers, including but not limited to: • Methods for transfer and handling of fuels and chemicals. • Spill response and use of spill kits. • Water conservation measures. • Sensitive water resources and associated buffers.	PC, C, O	Induction and toolbox talks	C, P, CEO	Before start of work and refresh as needed	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Training registers; toolbox talk records; improved compliance; fewer water-related incidents. ECO Reports. IEA Report
10.8. Soil Management Impact management outcomes: • Prevent soil erosion and sediment loss. • Minimise soil contamination. • Prevent soil from unnecessary degradation, compaction and disturbance. • Comply with all relevant soil protection legislation and permit conditions.								
GS01	Design and implement a SWMP for all direct project affected areas- refer to requirements in Stormwater Management section.	C	Earthworks, trenching, grading, stockpiling, drainage works	C, CEO	Before earthworks commence and maintain during construction	CEO, ECO, IEA	Monthly (C) Bi-annual (C)	Controls installed and functional; inspections recorded; no uncontrolled erosion or sediment transport off-site. ECO Reports. IEA Report
GS02	Regularly inspect and maintain soil and erosion control measures.	C, O	Maintenance of erosion and sediment controls	C, CEO, P	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Inspection checklists; maintenance records; corrective actions closed out in non-compliance register. ECO Reports. IEA Report

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GS03	• Restrict vehicle and machinery movement to designated routes to prevent compaction.	C, O	Vehicle movements and logistics	C, CEO, P	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	No new tracks; compaction minimised; access map communicated; inspection records and non-compliance register if breaches occur. ECO Reports. IEA Report
10.9. Traffic and Transport Management Impact management outcomes: • Prevent traffic-related injuries and fatalities for workers and the public. • Maintain safe separation of vehicles, pedestrians, and plant. • Minimize traffic congestion and delays on public roads. • Ensure visibility and compliance with speed limits road traffic legislation. • Provide clear signage, barriers, and lighting to guide road users and site personnel safely. • Prevent use of unauthorized routes. • Implement emergency response and incident management protocols for traffic-related events. • Minimise off-site dust track-out and deposition on public roads								
GT01	Develop and implement a Traffic Management Plan (TMP) covering roles and responsibilities, site access, haul routes, no-go or environmental and social sensitive areas, signage, speed limits, and emergency procedures. The TMP must be submitted to the ECO for review and comment. The TMP must be submitted to the relevant roads' authorities for comment and approval.	PC, C	Traffic planning; site access setup; haul route management; liaison with roads authority	P, DPM, C	Before construction traffic commences; update if routes/activities change	ECO, IEA	Monthly (C) Bi-annual (C)	TMP on file; approvals/communications retained (where applicable); signage and controls implemented; incidents tracked and addressed. ECO Reports. IEA Report

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GT02	Segregate pedestrian and vehicle routes; provide crossing points with adequate visibility and signage.	PC, C, O	Site layout; traffic control; pedestrian safety	C, CEO, P	Before mobilisation and maintained throughout works/operations	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Marked routes and crossings; signage installed; incident records (target: zero pedestrian-vehicle incidents); inspection logs. ECO Reports. IEA Report
GT03	Schedule heavy loads, deliveries and spoil removal on public roads to avoid peak traffic hours; use designated routes as defined in the TRP and where applicable approved by relevant authorities.	C, O	Logistics planning; deliveries and haulage	DPM, C, CEO, P	Throughout delivery/haulage periods	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Delivery schedule records; adherence to designated routes; reduced traffic complaints; incident/near-miss logs. ECO Reports. IEA Report
GT04	Maintain vehicle safety checks (brakes, lights, reverse alarms) and driver competency verification.	C, O	Fleet management; driver management	C, CEO, P	Before use and throughout operations	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Vehicle inspection checklists; maintenance records; driver competency records; reduced incidents. ECO Reports. IEA Report
GT05	Establish incident reporting and emergency response protocol for traffic accidents; conduct drills.	PC, C, O	Emergency preparedness; incident management	P, DPM, C	Before construction; maintain throughout	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Protocol available; drill records; incident reports and corrective actions; response times documented where possible. ECO Reports. IEA Report

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
GT06	Traffic to remain on designated access and routes	C, O	Daily vehicle movement control	C, CEO, P	Continuous	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	No new tracks/unauthorised routes; inspections; non-compliance register entries closed out. ECO Reports. IEA Report
GT07	Install and maintain stormwater infrastructure (e.g., culverts, drains, sediment traps) associated with site roads to prevent erosion, flooding, and waterlogging.	C, O	Road drainage and stormwater controls	C, CEO, P	During roadworks; maintained throughout	CEO, ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Drainage functional; no erosion gullies; inspections after storm events noted in reports; maintenance records. ECO Reports. IEA Report
10.10. Labour Management Impact management outcomes: • Fair treatment, non-discrimination, equal opportunity for all workers, including subcontracted and migrant workers. • Worker–management relationship strengthened; respect freedom of association and collective bargaining consistent with national law. • Compliant terms and conditions of employment (contracts, wages, working time, leave, termination) per applicable law/standards. • All necessary precautions linked to the spread of disease are taken. • Accessible worker grievance mechanism (WGRM) with confidentiality, non-retaliation, and timely resolution. • Decent worker accommodation and welfare.								
GL01	Written employment particulars/contracts with defined wages, hours, leave, termination conditions. These must be compliant with the Basic Conditions of Employment Act.	PC, C, O	Recruitment and onboarding; contract administration; workforce management	P, DPM, C	Before workers commence work; maintain throughout employment	ECO, IA	Monthly (C) Bi-annual (C) Annual (O)	Contracts on file for workers; payroll/HR records; no substantiated labour complaints about missing

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
								particulars; audit verification. CEO, ECO Reports. IEA Report
GL02	A grievance mechanism aimed at receiving and resolving labour issues must be developed and implemented. This must as a minimum include: • Dedicated roles and responsibilities; • Must be accessible to workers (consider physical access, literacy, languages, etc); • Must have a clear issue tracking mechanism and target resolution timelines. • Tracking and logging of all receipts and responses. • Workers must be informed of grievance procedures. The Grievance mechanism must be made available for inspection by the ECO and IEA.	PC, C, O	Worker relations and grievance handling	P, DPM, CEO	Before construction starts; maintain throughout project and operations	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Grievance procedure available; grievance register maintained; responses within timelines; evidence of communication to workers; close-out records. CEO, ECO Reports. IEA Report
GL03	Provision must be made for adequate sanitation for all workers (including ablutions and washing facilities where necessary). Sanitation facilities must be adequately maintained and serviced. Provision of at least 1 toilet for every 15 workers and separate facilities for males / females.	PC, C, O	Site establishment; welfare facilities; daily operations	C, CEO, P	Before workforce mobilises; maintain throughout	CEO, ECO, IA	Monthly (C) Bi-annual (C) Annual (O)	Sanitation facilities present and serviced; service records; inspections; no sanitation-related complaints/incidents. ECO Reports. IEA Report
GL04	Where mobile chemical toilets are required, the following must be ensured: • Toilets are located no closer than 100 m to any watercourse or water body. • Toilets are secured to the ground.	C	Temporary sanitation provision during construction	C, CEO	Before placement and throughout use	CEO, ECO, IEA	Monthly (C) Bi-annual (C)	Toilets positioned correctly; secured; service logs; no spillage incidents; inspections and photos; complaints register trend.

Item No.	Impact management action	Project phase[4]	Development activities	Responsible party[5]	Timeframe for implementation	Monitoring party	Monitoring frequency	Performance Indicators (Monitoring Tool)
	• No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the WMP. • Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out. • Toilets are emptied before long period of inactivity/ non-use (e.g. weekends, workers holidays). • Toilets are serviced regularly and comply to health standards.							ECO Reports. IEA Report
GL05	Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS.	PC, C, O	Induction and health awareness campaigns	C, CEO, P	Induction prior to work; refresh periodically	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	Training/campaign records; attendance registers; awareness materials; reduced disease-related incidents where tracked. ECO Reports. IEA Report
SL01	• No overnight worker accommodation on site.	C, O	Workforce accommodation and site rules	P, C, CEO	Continuous	ECO, IEA	Monthly (C) Bi-annual (C) Annual (O)	No overnight accommodation observed; site rules posted; any exceptions (e.g., security) documented and approved; audit evidence. ECO Reports. IEA Report

11 APPENDICES

Appendix 1: EAP Curriculum Vitae