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DRAFT: ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

REF: DC28/0009/2022 KZN/EIA/0001789/2022

The Proposed Development of CFCI Esikhawini Church Auditorium at Esikhawini Extension J, ERF1976, within Ward 19 of uMhlathuze Local Municipality, KwaZulu Natal.

July 2022

Prepared for:

TJ Architects International (Pty) Ltd



On behalf of:

Covenant Fellowship Church International



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Overview: Recommendations of mitigation measures related to the proposed development of an auditorium for church services at Esikhawini, Extension J, ERF1976, Ward 19 of UMhlathuze Local Municipality.

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QMS - INFORMATION

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Revision	Revision Date	Details	Authorized	Name	Position
1	20/07/2022	Draft EMPr Report	Y	Dumisani Myeni	Study Lead Env. Scientist
2	21/07/2022	Draft EMPr Report	Y	Phumzile Lembede	Principal EAP Env. Scientist

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LIST OF ACCRONYM

C	Contractor
DEDTEA	Department of Economic Development, Tourism and Environmental Affairs
DEV	Developer
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
I&AP	Interested and Affected Parties
NEMA	National Environmental Management Act (Act 107 of 1998)
NEMWA	National Environmental Management Waste Act (Act 59 of 2008)
NHRA	National Heritage Resources Act (No. 25 of 1999)
NWA	National Water Act (No 36 of 1998)
PM	Project Manager
PPA	Project Principal Agent
PTO	Permission to Occupy
EA	Environmental Authorisation
SAHRA	South African Heritage Resources Agency
ToR	Terms of Reference

GLOSSARY OF ITEMS

ARCHAEOLOGICAL RESOURCES: includes (a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures; (b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation; wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters.

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP): describes the main environmental management requirements that the Contractor must comply with during the construction phase to ensure that the environment is considered, negative impacts avoided, or minimised, and positive impacts enhanced. The CEMP is critical to the principal Contractor and the Contractor's Environmental Officer (EO) as well as any sub-contractors performing work on the principal Contractor's behalf.

CONSTRUCTION PROJECT MANAGEMENT TEAM: The team consists of a Project Manager as well as a Safety and Health Officer as required in terms of the Occupation Health and Safety Act (Act 85 of 1993) (OHSA) and an Environmental Control Officer (ECO) as required in terms of NEMA.

CONTRACTOR: companies and or individual persons appointed on behalf of the client to undertake activities, as well as their subcontractors and suppliers.

DEVELOPMENT: the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration, or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.

DEVELOPMENT FOOTPRINT: any evidence of physical alteration as a result of the undertaking of any activity.

ENVIRONMENT: in terms of the National Environmental Management Act (No 107 of 1998) (as amended) (NEMA), Environment means the surroundings within which humans exist and that are made up of:

- the land, water, and atmosphere of the earth;

- micro-organisms, plants and animal life;
- any part or combination of (i) of (ii) and the interrelationships among and between them;
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

ENVIRONMENTAL CONTROL OFFICER (ECO): an individual nominated through the client to be present on-site to act on behalf of the Client in matters concerning the implementation and day to day monitoring of the CEMP and conditions stipulated by the authorities as prescribed in NEMA.

ENVIRONMENTAL MANAGEMENT PLAN (EMP): A plan generated by the Contractor describing the relevant roles and responsibilities and how potential environmental risks will be assessed and managed including the monitoring and recording thereof.

ENVIRONMENTAL IMPACT: the change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

EMERGENCY: an undesired event that results in a probable significant environmental impact and requires the notification of the relevant statutory body such as a local or provincial authority.

FATAL FLAW: is an issue or conflict (real or perceived) that could result in developments being rejected or stopped.

HAZARDOUS WASTE: hazardous waste means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste have a detrimental impact on health and the environment.

INCIDENT: is an event that may cause harm or potential harm to an environmental receptor e.g. air, water, land, wildlife or local habitat.

INDIGENOUS VEGETATION: refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

INTERESTED AND AFFECTED PARTY (I&AP): for the purposes of Chapter 5 of the NEMA and in relation to the assessment of the environmental impact of a listed activity or related activity, an interested and affected party contemplated in Section 24(4) (a) (v), and which includes (a) any person, group of persons or organization interested in or affected by such operation or activity; and (b) any organ of state that may have jurisdiction over any aspect of the operation or activity.

MAINTENANCE: actions performed to keep a structure or system functioning or in service on the same location, capacity, and footprint.

METHOD STATEMENT: a method statement is a written submission by the Contractor to the Engineer in response to the specification or a request by the Engineer, setting out the plant, materials, labour, and method the Contractor proposes to carry out an activity, identified by the relevant specification or the Engineer when requesting a Method Statement. It contains sufficient detail to enable the Engineer to assess whether the Contractor's proposal is in accordance with the Specifications and/or will produce results in accordance with the Specifications.

MITIGATION: the measures designed to avoid reduce or remedy adverse (negative) impacts.

POLLUTION: the NEMA defined pollution to mean any change in the environment caused by the substances; radioactive or other waves; or noise, odours, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience, and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.

PROJECT ENVIRONMENTAL SPECIFICATION (PES): describes standards specific to a particular project. Variations and additions to the SES are set out in this PES. These would include the Environmental Authorisation (EA) issued to the project or elements generally drawn from the EA. The PES may also require a more stringent standard to that described in the SES if required by the EA or a particular industry code to which the project subscribes including any environmental constraints at a construction site. The PES need not be a separate document; however, it can be in a format of an appendix/addendum making reference to the EA, permit(s) or licence(s) applicable to the project. In cases where the project does not trigger any of the NEMA listed activities or any permit(s)/licence(s), the PES may be compiled to prescribe additional environmental management measures over and above the measures stipulated on the SES.

REHABILITATION: rehabilitation is defined as the return of a disturbed area to a state which approximates the state (wherever possible) which it was before the disruption.

SAFETY, HEALTH AND ENVIRONMENTAL (SHE) OFFICER: the SHE officer is a contractor's representative, responsible for the safety, health and environmental aspects on the construction site. The SHE officer will be responsible for the day-to-day monitoring of the EMP and Health and Safety Plan as per the OHS Act.

STANDARD ENVIRONMENTAL SPECIFICATION (SES): describes the minimum standards for environmental management for a range of environmental aspects associated with all construction projects with which the Contractor must comply.

WATERCOURSE: can be a) a river or spring; b) a natural channel or depression in which water flows regularly or intermittently; c) a wetland, lake or dam into which, or from which, water flows; and/or d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998) (NWA) and a reference to a watercourse includes, where relevant, its bed and banks.

WATER POLLUTION: the NWA defined water pollution to be the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it less fit for any beneficial purpose for which it may reasonably be expected to be used; or harmful or potentially harmful (aa) to the welfare, health or safety of human beings; (bb) to any aquatic or non-aquatic organisms; (cc) to the resource quality; or (dd) to property.

WETLAND: a land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

WORKFORCE: refers to the entire project team including people employed by the Applicant/Client/Developer directly, his Principal Agent or the Contractor, persons involved in activities related to the project, or person present at or visiting the construction area, including permanent contractors and casual labour.

1 INTRODUCTION

Emvelo Quality and Environmental Consultant has been appointed by TJ Architects International (Pty) Ltd, on behalf of Covenant Fellowship International (CFCI), as an independent Environmental Assessment Practitioner (EAP) to undertake the environmental authorization processes as required by NEMA and a host of related environmental legislation. As part of this process, this is an Environmental Management Programme (EMPr) report which will be used to promote and ensure environmental monitoring and control during the planning and design, construction, and operational phases of the proposed development, has been compiled. The contents of this EMPr have been compiled according to the prescribed legal requirements contained in Appendix 4 of the Amended EIA Regulations, 2017.

2 PURPOSE OF THIS DOCUMENT

The purpose of this EMPr is to ensure that the environmental impacts of the various phases of the development of the receiving environment are managed, mitigated, and kept to a minimum. The document is binding on the Applicant; all contractors and sub-contractors; and visitors to the site. It must be included as part of any tender, as well as contractual documents between the applicant and any contractors. This will ensure that all environmental impacts are managed for the duration of project cycle. This document requires that responsibility, accountability, and commitment are promoted by the developer, the main contractor, and sub-contractors.

3 OBJECTIVES OF THE EMPR

The objectives of this document are to:

- Encourage good management practices through planning and commitment to environmental issues;
- Define how the management of the environment is reported and performance evaluated;
- Provide rational and practical environmental guidelines to:
 - Minimise disturbance of the natural environment;

- Prevent or minimise all forms of pollution
- Protect indigenous flora and fauna;
- Prevent soil erosion and facilitate re-vegetation of affected areas;
- Comply with all applicable laws, regulations, standards, and guidelines for the protection of the environment;
- Adopt the best practical means available to prevent or minimise adverse environmental impacts;
- Ensure that the construction and operational phases of projects are undertaken within the principles of Integrated Environmental Management;
- Develop waste management practices based on prevention, minimisation, recycling, treatment, or disposal of waste;
- Describe all monitoring procedures required to identify impacts on the environment;
- Train employees and contractors with regards to their environmental obligations;
- Provide a pro-active, feasible and practical working tool to enable the measurement and monitoring of environmental performance on-site; and
- Detail specifications deemed necessary to assist in mitigating the environmental impacts of project.

4 SCOPE OF THE EMPR

In order to achieve the above objectives, the scope of work must be according to the requirements as stipulated in the EIA regulations, Government Notice No. 38282 as amended in 2017. The EIA regulations stipulate the requirements for the content of EMPr.

Therefore, the scope of the EMPr must include the following:

- Definition of environmental management objectives to be realised during the life of the project (i.e., construction, operation, and decommissioning phases);
- Definition of detailed actions needed to achieve these objectives, including how they will be achieved, by whom, by when, with what monitoring/verification, and to what target or performance level;

- Mechanisms must also be provided to address the changes in project implementation, emergencies or unexpected events and associated approval processes;
- Clarification of institutional structures, roles, communication and reporting processes required as part of the implementation of the EMPr;
- Description of the link between EMPr and associated legislated requirements;
- Description of the requirements for monitoring implementation of the EMPr, record keeping, reporting, review, auditing and updating of the EMPr.

5 STRUCTURE OF THE EMPR

Table 1: Phases of the EMPr

Categories	Project Phases	Description
Category A	Pre-Construction Phase	This section will provide guidelines on pre-construction activities including admin requirements site establishment and clearance; environmental induction and training and awareness; site access and health and safety.
Category B	Construction/ site Rehabilitation Phase	This section will provide guidelines on construction methods and considerations during the development phase.
Category C	Post Construction/ Operation Phase	This section of the EMPr provides management principles for the operational phase of the proposed development. This will include best practice, procedures and responsibilities as required for various associated activities.

This EMPr is a dynamic document which will be updated as required on a continuous basis to ensure environmental best practices. Amendment of this EMPr should be submitted to the competent authority (EDTEA- King Cetshwayo District Municipality).

6 EMPr AS DEMING CYCLE

This EMPr is compiled in accordance with the Deming cycle which emphasises on continuous improvement that entails the reiterative actions such as plan, do, check, and act.

ACTION	DESCRIPTION
Plan	<p>Project-specific planning for the proposed project involves consideration of the legal triggers, the specifics of the proposed development, and the nature of the receiving environment. This provides a starting point for targeted environmental management objectives. Environmental performance indicators are then determined with measurable targets prescribed to monitor the environmental performance of the project. Achieving the targets depends on compliance with this EMPr and the legislative requirements that underpin it.</p>
Do	<p>Throughout the development's lifespan, the developer will be required to develop and maintain a Quality Management System (QMS), designed to ensure that best management practices are implemented on day-to-day management.</p> <p>Such a QMS should at least include the following information:</p> <ul style="list-style-type: none"> • Location and extent of associated infrastructure; • Associated activities, such as the transportation of people and equipment; • Resources and experience required (staffing); • Materials and equipment to be used; • Management actions; • Construction-monitoring activities; • Emergency /disaster incident and reaction procedures; and • Rehabilitation procedures for the impacted environment.
Check	<p>A system of assessing monitoring results has been developed to check the environmental management performance. Continuous assessment facilitates proactive management of the environmental issues. Mitigation measures can then be successfully implemented on an ongoing basis to keep environmental indicators within their target thresholds. Moreover, the assessment system also enables the</p>

	assessment of the efficiency of the EMPr. Regular auditing of environmental performance is prescribed to prove and preserve accountability.
Act	The assessments and monitoring of the results and findings of the regular audits must be documented within a reporting system. Precautionary mitigation measures and corrective actions will be prescribed, and instructions will be given in order to implement these in the field. The findings of monitoring and auditing programmes can also be used to update the EMPr. Although the EMPr is a project-specific document, it is dynamic and should be updated regularly to address the changing circumstances during the life cycle of the project.

7 PROJECT DESCRIPTION

This general project information outlines the following:

- Proposed construction activities;
- Locality of the development;
- Identification of site-specific environmental concerns; and
- Identification of potential environmental impacts.

7.1 Proposed construction activities

The proposed development will comprise of the following components:

- ✚ The construction of 2540.96m² main church structure (two storey building);
- ✚ Construction of 211.38m² spill out area;
- ✚ Construction of 77.31 m² guard house;
- ✚ Construction of 4931.55m² paved parking lots;
- ✚ Construction of stormwater systems.

Total development footprint will be 8 077.57m². The site area allocation is approximately 9000m².

7.2 Project Locality

The site co-ordinates are as follows:

Table 2: Project Locality

Latitude /Longitude	Degrees	Minutes	Seconds
Site Location			
South	28°	53'	13.5"
East	31°	53'	41.9"
Wetland Intrusion			
South	28°	53'	12.10"
East	31°	53'	44.12"

7.3 Site Specific Environmental Concerns

There is one wetland system that was identified spanning along the east and west of the proposed Covenant Fellowship Church International property boundary. The identified wetland was classified as the Channelled Valley Bottom wetland (HGM 1). This wetland is a stormwater trench which was designed to channel stormwater from upper lying areas of Esikhawini J section down to Mzingwenya River. The wetland was assessed to have a Present Ecological Sensitivity (PES) of a Category C (Moderately Modified), owing to the transformed nature of the surrounding land use and its influence on the wetland system. The Ecological Importance and Sensitivity (EIS) of the wetland was assessed being of ‘High (B class)’.

7.4 Activities and aspects causing impacts

Potential negative impacts that are likely to occur during the construction and operational phases are outlined on (**Table 3**) below.

Table 3: Identification of potential environmental impact

#	Proposed construction work activity	Potential negative impact
1	Site camp establishment	Clearance of natural vegetation, loss of habitat for fauna species, noise generation, dust generation and air pollution.
2	Vegetation clearance and excavation work	Clearance of indigenous vegetation disturbance of geological features, uncovering of cultural artifacts during excavations. erosion, sedimentation, degradation of wetland system, dust generation (Biophysical and social impact).
3	Open excavation and placing of material stockpiles and construction material	Stockpiles near the watercourse, dust generation, sedimentation, pollution on water bodies (bio-physical environmental impact). Infestation of alien plants. Soil erosion, safety

		hazards as results of open excavations (social impact).
4	Construction activities.	Soil erosion, sedimentation, infestation of alien vegetation, compaction of wetland area. Air, water, and land pollution. Distraction of natural vegetation, loss of habitats for fauna species, solid and hazardous waste generation. Noise generation, disturbance of traffic flow and safety hazard to pedestrians and domestic animals (social impact).

8 LEGISLATIONAL REQUIREMENTS OF THE EMPR

This EMPr, which forms an integral part of the contract documents, it informs the contractor as to his/her duties in the fulfilment of the project objectives, with reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project.

The contractor must note that obligations imposed by the EMPr are legally binding in terms of environmental statutory legislation (NEMA, Section 28, “Duty of Care”), the EA conditions, and in terms of the additional conditions to the general conditions of the contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter will prevail.

Additionally, in terms of NEMA (second amendment), a developer may be guilty of an environmental contravention and liable for a penalty of up to R10m or a 10-year prison term (or both) when listed activities are undertaken without an EA or the project does not comply to the conditions of the environmental authorisation (EA).

It is expected that the contractor is conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract. Some of the environmental legislation applicable to this type of project include, but are not limited to, the following legislation:

8.1 Applicable listing notices

Table 4: Applicable Listing Notices

Listing Notice	Activity	Description and Applicability
1	12	<p>The development of—</p> <p>(ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs—</p> <p>a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>APPLICABILITY</p> <p><i>The CFCI has a total development footprint of 8 077.57m², with its two corners of the site northern boundary intercept with wetlands (NFEPA) and SAIIIE wetlands.</i></p>

8.2 Relevant legislations and municipal by laws

Table 5: Relevant legislations and environmental aspects

#	Legislation	Environmental Aspect
1.	Constitution of South Africa (Act No 108 of 1996)	Environmental rights of the local community.
2.	National Environmental Management Act, 1998 (Act No. 107 of 1998);	Duty of care; reasonable measures; reporting of incidents; protection of workers; environmental whistleblowers; private prosecution; criminal proceedings; fines; EIA regulations

3.	Environmental Conservation Act, 1989 (Act 73 of 1989)	Establishment of waste sites; littering
4.	National Environmental Management: Biodiversity Act (Act No 10 of 2004);	Plants, animals, threatened or protected species (TOPS)
5.	National Environmental Management: Waste Act. 2008 (Act No 59 of 2008)	Waste generation, storage, and disposal
6.	The National Water Act, 1998 (Act 36 of 1998);	Watercourses (wetlands); water use
7.	Hazardous Substances Act (Act No 15 of 1973)	Hazardous substances and chemicals
8.	Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965);	Vehicle and machinery emissions
9.	National Environmental Management: Air Quality Act (Act 39 of 2004);	Emissions include dust generation
10.	National Heritage Resources Act (Act 25 of 1999)	Structures older than 60 years, archaeological (human remains, wrecks, rock art, artefacts of military history older than 75 years) or paleontological (fossil remains of animals or plants) or any meteorite or graves
11.	The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983);	Soil erosion; spreading of weeds (alien invasive plants)
12.	Advertising on Roads and Ribbon Development Act (Act 21 Of 1940)	Litter along public roads
13.	National Building Regulations and Building Standards Act (Act 103 of 1977)	Erection of buildings; building standards
14.	Occupation Health and Safety Act (Act 85 of 1993)	Safety of workers and the public
15.	Fencing Act (Act 31 Of 1963)	Accessing properties; fences
16.	Public Finance Management Act (Act 1 of 1999)	Fruitless, wasteful, and irregular expenditure arising from environmental incidents or non-compliance to EA/EMPr

17.	<p>Umhlathuze Local Municipality bylaws:</p> <ul style="list-style-type: none"> • Advertising Sign Bylaw • Building Aesthetics Bylaw • Building Control Bylaw • Control Of Parking Attendants/ Car Guards Bylaw • Disaster Management Bylaw • Electricity Supply Bylaw • Environmental Health Bylaw • Nuisances Bylaw • Property Rates Bylaw • Solid Waste Bylaw • Storm water Management Bylaw • uMhlathuze Spatial Planning and Land Use Management Bylaw • Water Services Bylaw 	Municipal bylaws applicable to construction and operational phase of the proposed CFCI project.
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9 DUTIES OF ROLE PLAYERS

Several role players will be responsible for ensuring that environmental practices described in this report are implemented through each of the various phases of the project life cycle (Pre – construction, construction, operations and maintenance, decommissioning). Formal responsibilities are necessary to ensure that all environmental procedures and actions are executed. Specific responsibilities of the Project Proponent, Project Manager/Project Principal Agent, Site Manager/Engineer, and Contractor/Operator are detailed below.

9.1 The Holder of Environmental Authorisation (Client / Project Proponent)

The Client (Covenant Fellowship International Church) is the holder of the EA and is responsible for the implementation of the conditions of the authorization as well as the management measures contained in the approved EMPr. In terms of NEMA, Section 28 (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". All liabilities associated with the land will lie with the registered landowner. The holder is ultimately liable for the potential impact of the activities that are undertaken and is tasked with effective management of these impacts.

The holder of the EA is accountable for:

- Appointment of an Environmental Control Officer (ECO) as may be required for monitoring of implementation and compliance of the EA and EMPr during the construction phase;
- Ensuring that all conditions of the EA and EMPr are complied with;
- Ensuring that all the necessary environmental licences and permits are in place before any construction activity can begin in an affected part of the project area/route;
- Appointing a contractor required for the management of environmental impacts, such as waste management and monitoring of any other required activity;
- Assessment of all activities requiring special attention as specified and /or requested by the Project Principal Agent (PPA) or Project Manager (PM) and/or ECO for the duration of the contract;
- Ensuring that the contractor conducts all activities in a manner that minimizes disturbance to the directly affected residents and public in general, as advised by the PPA and/ or ECO; and
- To order the contractor, through the PPA, to suspend any or all works on-site if the contractor or his subcontractor/supplier fails to comply with the any environmental specifications the EA and the EMPr or recommendations of the ECO.

9.2 The Engineer (Project Principal Agent)

TJ Architects International (Pty) Ltd is the PPA for the proposed development of an auditorium for church services at Esikhawini, Extension J, ERF1976, Ward 19 of UMhlathuze Local Municipality.

The PPA has overall responsibility for environmental management on site which includes the implementation of the provisions of this EMPr. Therefore, the PPA roles and responsibilities include the:

- The appointment of an ECO that will monitor the implementation of the CEMP;
- Overall responsibility for the implementation of the EMPr;
- Assessment of all activities requiring special attention as specified and /or requested by the ENG and/or ECO for the duration of the contract; and ensures that the Contractor conducts all activities in a manner that minimizes disturbance to the directly affected residents and public in general, as advised by the ENG and/ or ECO.
- Ensuring that the Site Manager/Engineer and the Contractor/Operator are aware of all specifications, legal constraints, standards and procedures pertaining to the project specifically with regard to the environment;
- Ensuring that all stipulations within the EMPr are communicated and adhered to by Site Manager/Engineer and the Contractor/Operator;
- Assessing the Contractor's environmental performance in consultation with the ECO, and communicating directly with the Contractors on environmental issues observed on site;
- Liaising with the Contractor on the matters concerning the environment, and issuing of the non-conformance notifications to Contractors in consultation with the ECO;
- Arranging information meetings for and consulting with I&AP's about the impending construction activities;
- Maintaining a register of complaints and queries by members of the public at the site office. This register is to be forwarded to the ECO on a monthly basis;
- Ensuring the documentation of the state of the site prior to the commencement of construction activities, in conjunction with the Contractor;
- Preventing actions that will harm or may cause harm to the environment, and take steps to prevent pollution of the site;
- Reviewing and approving construction methods where necessary; and

- Instructing the Contractor to suspend any or all works on-site if the Contractor or his subcontractor/supplier fails to comply with the environmental specifications, and conditions of the EA or the EMPr.

9.3 Environmental Control Officer

The Environmental Control Officer (ECO) Should be appointed by the PPA (on behalf of Covenant Fellowship International) has the responsibility for audit and enforce compliance with the EA and EMPr and undertaking regular monitoring of the site. The ECO is responsible for conducting the environmental audits, during the construction phase of the project, according to the provisions of the EMPr, CEMP and the EA.

The following are the duties of the ECO:

- To understand the background of the project and ensure the implementation of the EA conditions and the EMPr;
- To monitor the implementation of the EA conditions and the EMPr;
- To advise the PPA about the interpretation, implementation, and enforcement of the EA and EMPr and other relevant environment-related matters;
- To brief the Contractor about the requirements of the EA, Environmental Specifications and the EMPr, as applicable;
- To monitor and report to the PPA on the performance of the Contractor and the project in terms of environmental compliance;
- To be fully conversant with all related environmental legislation and ensure compliance;
- To ensure that all the environmental requirements contained within the EMPr are adhered to;
- To report all non-compliances with the EA and EMPr to the relevant authority, after consultation with the PPA;
- To regularly liaise with the Site Manager on matters relating to the environment; and
- To compile monthly reports as to the implementation of the EMPr which should include a percentage compliance status to the EA and EMPr conditions.

9.4 Contractor

The Contractor shall comply with the requirements of the EA and EMPr and abide by the PPA's/PM's and ECO 's instructions regarding the implementation of the EMPr. The contractor shall:

- Comply with all applicable legislation;
- Be conversant with the requirements of the EA and the EMPr and ensure 100% compliance to all conditions therein;
- Induct and educate all staff, including sub-contractors, about the requirements of the EA and EMPr;
- Ensure that sub-contractors/suppliers who are utilised within the context of the contract comply with the environmental requirements of the EA and EMPr. The Contractor will be held responsible for non-compliance on their behalf;
- Supply the method statement for all activities requiring special attention as specified and/or requested by the Engineer or ECO during the duration of the Contract;
- Inform and educate their employees about the environmental risks of their work and the way their tasks must be performed in order to avoid causing significant pollution or degradation of the environment (environmental training); and retain records of such training undertaken;
- Bear the costs of any damages/ compensation resulting from non-adherence to the EA and EMPr or written site instructions;
- Conduct all activities in a manner that minimizes the disturbance to directly affected residents and the public in general, and foreseeable impacts on the environment; and
- Ensures that the PPA is timeously informed of any foreseeable activities that will require input from the ECO.

9.5 Contractor's Safety, Health and Environmental (SHE) Officer

The Contractor shall appoint a Safety, Health and Environmental (SHE) Officer or an equivalent resource with the documented responsibility and letter of appointment for

environment-related issues on this project before commencement of any work on site. Such a resource will be responsible to ensure implementation of the requirements of the EA, EMPr, EMP, SES and PES where applicable. The contractor's SHE Officer should have relevant environmental qualifications and experience required for the project.

The Contractor's SHE Officer will liaise with the ECO appointed by developer or the PPA.

The responsibilities of the Contractor's SHE Officer are to:

- Be fully conversant with the CEMP, EMP, SES, PES and other relevant environmental requirements;
- Be fully conversant with the EA and EMPr, and ensure 100% compliance to all conditions therein;
- Be fully conversant with all relevant environmental legislation applicable to project, and ensure 100% compliance;
- Compile Method Statements together with the Principal Contractor that will specify how potential environmental impacts in line with the requirements of the CEMP will be managed, and, where relevant environmental best practice and how they will practically ensure that the objectives of the CEMP are achieved;
- Convey the contents of this EMPr to the construction site staff and discuss the contents in detail with the Contractor by means of conducting ongoing Environmental Awareness and Training of the Contractor's site personnel through the means of toolbox talks and other means of communication;
- Undertake daily and weekly inspections of the work area(s) as per schedule or authorised through written instruction by PPA or ECO;
- Ensure conformance/compliance to the EMPr, licenses, and permits and approved Environmental Method Statements;
- Monitor and verify that negative environmental impacts are kept to a minimum, as far as possible;
- Report any non-compliance or remedial measures that need to be applied to the ECO and PPA, in line with the requirements of the EMPr;
- Order the removal from the construction site of any person(s) and/or equipment in contravention of the specifications of the EA and EMPr;

- Maintain an environmental management file and all relevant documentation and records related to environmental management;
- Maintain a hazardous substances register; and
- Present a report at each site meeting which will document all incidents that have occurred during the period before the site meeting.

10 ENVIRONMENTAL CAPACITY BUILDING PLAN

The environmental capacity building plan includes the schedules records of environmental training, induction, community involvement, and communication strategy.

10.1 Environmental training

The project team will be briefed on environmental aspects and impacts associated with the project, the compliance to environmental standards, licences and permits, the EA and the EMPr.

10.2 Induction

All staff and labourers will be required to attend a site environmental induction session, conducted in their preferred language. The site environmental aspects and impacts will be discussed during the induction session.

10.3 Community involvement

The line of communication between the Contractor, proponent and the community must be defined before the Contractor proceeds with the construction activity. Residents must be notified 30 days before the construction of the CFCI Esikhawini Auditorium commences. A register of public concerns complains, and suggestions must be always kept on site for the ECO to review during monthly compliance monitoring sessions and must be presented at monthly project team meeting.

10.4 Communication strategy

The environmental communication strategy will be developed, so that the project team and all relevant I&APs will follow a documented communication procedure. The PPA will be responsible for the communication throughout the project.

Emergency and incident reporting structures will be designed to handle any emergencies or incidents that might arise at the construction site and surroundings. The community strategy must include a designated disaster management team and community representatives (CLO). Emergency contact numbers and procedures shall be communicated with the employees and community.

11 ENVIRONMENTAL CODE OF CONDUCT

One of the objectives of the EMPr is to ensure that all the workers, contractors, sub-contractors, and construction staff on this project, understand basic and relevant environmental issues and the potential impacts of on-site activities. This Environmental Code of Conduct provides the basic rules that must be strictly adhered to. It is the responsibility of the ECO and SHE officer to ensure that each contractor, sub-contractor, and workers understands and adheres to the Code of Conduct.

All persons are obliged to abide by the Code of Conduct. Therefore, ignorance, negligence, recklessness, or a general lack of commitment will be a transgression to the Code of Conduct.

11.1 Environmental Rules

The environmental rules apply to all personnel on site to:

- Prevent pollution;
- Prevent littering;
- Dispose all waste in the waste bins provided, not the communal waste skips;
- Use the toilet facilities provided and not utilise the natural environment for their ablutions;
- Immediately report to the supervisor when a spillage occurs or becomes aware of a hazardous substance spillage from a vehicle, equipment, machinery or container;
- Not enter any property with the landowner or occupier's permission;
- Not dig, excavate or the erect any permanent or semi-permanent structure of any kind that is not in the scope of this project;
- Not excavate at proximity of grave sites, without the PPA's consent. All excavation must at least be 30m away from grave sites;
- Not climb over or through any fence or enter private and neighbouring properties;
- Maintain the character and visual quality of the area;
- Not to excavate 10m near the wetland without SHE officer supervision

- Never deface, draw, add graffiti or cut lettering or any other markings on trees, rocks or buildings in the area;
- Collect all litter lying around and dispose as per;
- Be familiar with basic fire-fighting procedures;
- Be aware of the locations of all fire-fighting equipment;
- Not to establish any fires allowed outside the confines of the construction camp;
- Not to burn any waste;
- Care for plants and animals;
- Not injure, poach or kill any wildlife;
- Never damage, chop down or remove any tree or shrub (unless part of the scope of the project and the necessary permits/licences are in place);
- Refuse to perform any work if, in good faith and reasonably believe, at the time of the refusal that the performance of the work would result in an imminent and serious threat to the environment.

12 NON-COMPLIANCE

The application of a penalty clause to the Contractor will apply for incidents of non-compliance to the EA and EMPr, once the necessary investigations have been completed. The penalty imposed will be per incident and shall be deducted from the Contractor's monthly payment certificate.

A non-compliance notice will be issued to the responsible contractor by the ECO via the Proponent's Project Manager. The non-compliance notices will be issued in writing, a copy filed in the generic EMPr file and will, as a minimum include the following:

- Time, location and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Root cause of the incident;
- Recommended / required corrective action to remedy/fix the incident;
- Recommended actions to prevent a recurrence of the incident; and
- Date by which the corrective and preventative actions will be completed.

The contractor shall act immediately when a notice of non-compliance is received and remedy/fix the non-compliance (where practical). Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated incident register and the response noted with the date and action taken. The ECO must be made aware of any such complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant Competent Authority (CA).

The contractor is deemed to be in non-compliance with the EA and the EMPr, *inter alia*, if there is a deviation from any environmental condition, environmental requirement, license or permit condition, or whose actions may cause an environmental impact.

12.1 Application of Penalties

Where environmental damage has occurred, a pollution incident, and/or failure to comply with any of the environmental specifications contained in this EMP, the developer and/or contractor shall be held liable. The noncompliance should be reported to the competent authority (KZN EDTEA) and shall decide appropriate fine associated with particular environmental transgression.

13 PRE-CONSTRUCTION PHASE

13.1 Environmental file

Table 6: Contents of environmental file

Impact Management Outcome: All relevant environmental documents and records are easily accessible to facilitate compliance to the EA and EMPr						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
Content of Environmental File must include but not limited to these docs: <ul style="list-style-type: none"> • Environmental Authorization • Relevant environmental permits and licences • Site Access Certificate (PTO) • Site Closure Inspection Form • Site layout plan • Waste Disposal Certificates • Environmental Site Rules/ Environmental Awareness Toolbox Talk • Environmental training schedule and records 	SHE Officer, ECO & PM	Make use of EA and other authorization conditions. Have a lever arch file, divided for the different docs and clearly labelled.	Project Implementation. Pre-construction	ECO	Monthly	In line with EA, WUL: GA and other environmental permits and licences

<ul style="list-style-type: none"> • All audit reports and weekly site inspection reports • Complaints Incident Register • EMPr, CEMP, PES as supplied by PPA, and EMP by Contractor • Signed Declaration of Understanding • Other Environmental Standards required for this project • Contractor's Environmental Method Statement(s) for waste management, soil erosion, dust control, vegetation removal and material storage area. Also, including a spill contingency plan and alien plants management. • Contractor Environmental Policy • Contractor Organogram • Appointment of Contractor' SHE Officer and Declaration of Understanding (Including CV) • Schedule of Contractor' Plants and Equipment • MSDS and Hazardous Substance Register • Emergency Contact Register 						
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13.2 Environmental Awareness Training

Table 7: Environmental communication and awareness

Impact Management Outcome: All workers are aware of environmental impacts, understand their individual responsibilities in terms of this EMPr and are able to minimize the negative environmental impacts of the project						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The project team must receive environmental training on the environmental legislation, EA and EMPr conditions and requirements; 	ECO & PM	Through scheduled sessions or as part of contract meeting	Initial contracts meeting	ECO	Once	Minutes/ Attendance Registers
<p>All staff and construction laborer must receive environmental training on the:</p> <ul style="list-style-type: none"> The EMPr & other relevant site documents; No-go Areas; Method statement(s) Materials stockpile and lay down areas to be demarcated; Method of stockpiling to be discussed; Solid waste removal intentions; 	ECO, SHE Officer & CM	Through scheduled sessions	Prior to site establishment, and when required	ECO	Monthly	Attendance Registers

<ul style="list-style-type: none"> • Placement, type and service of toilets to be agreed on; • Placement and type of rubbish bins and removal of rubbish to be agreed on; and • Location & establishment of concrete mixing area. 						
<ul style="list-style-type: none"> • All visitors should be made aware of the environmental site rules. 	CM & SHE Officer	Through Site Environmental Rules	Duration of a project	ECO	Monthly	Attendance Registers
<ul style="list-style-type: none"> • The Contractor to maintain effective communication with all relevant I&APs. 	CM & SHE Officer	Information Posters & Suggestion scheme	Duration of a project	ECO	Monthly	Information poster at site office& work areas. Communication Records

13.3 Project Planning

Table 8: Project planning

Impact Management Outcome: Project plans prevents unnecessary environmental degradation.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Project planning should ensure the protection of watercourses from degradation by ensuring that final design plans clearly demonstrate a buffer of the channel valley bottom. This buffer should be 5m and it should be regarded as a no-go area. No construction activity should take place in these no-go areas. 	PM	Site demarcation and establish no-go areas.	Pre-Construction phase	ECO	Monthly	Checklist, photographs, and adherence to site project layouts
<ul style="list-style-type: none"> Design adequate stormwater management system comprise surface and subsurface drainage for continual drainage of proposed settlement site to prevent seepage and geological 	PM	The use of Just in Time (JiT) production model, Stormwater management plan	Pre-Construction Phase	ECO	Monthly	Best construction practice, and adherence to project designs. No signs of erosion and Photographs.

instability because of ponding and sinkholes.		and engineering designs.				
<ul style="list-style-type: none"> A plan should be in place to ensure that construction workers does not cause nuisance to the nearby properties and households. 	PM, CM and Social Facilitator	Site rules and Community engagements.	Pre-Construction Phase	ECO	Pre-Construction Phase	Site Rules & Complains register.

13.4 Site Camp Establishment

Table 9: site camp establishment

Impact Management Outcome: Site camp establishment to have minimal environmental impacts for the duration of the project						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> • Proof of Land Ownership such as a copy of a title deed should be placed inside the environmental file. 	PP & PM	Client to place copy of title deed inside the environmental file.	Prior to site establishment	ECO	Once	Copy of Title deed
<ul style="list-style-type: none"> • Establishment of site camp in the sensitive area should be avoided to minimize the environmental degradation. • Site camp should be established at least 10m away from the wetland on site. 	PM, CM & ECO	Client or Local authorities to designate the area for site camp. PM, CM & ECO prior site visit.	Prior to site establishment.	ECO	Once	Photographs of prior to site establishment.
<ul style="list-style-type: none"> • Disturbance or damage to indigenous vegetation when clearing the site must be minimized as much as possible. 	PM, CM & SHE Officer	Buffer and mark all red data plant species	Prior to site establishment, and during the project	ECO	Monthly	Photographs prior to site establishment, measured with current status

<ul style="list-style-type: none"> Topsoil must be striped together with grass / groundcover from all areas where temporary structures are located, and stockpile topsoil. 	PM, CM & SHE Officer	Rehabilitation Plan	During site establishment	ECO	Monthly	Images and adherence to rehabilitation plan.
<ul style="list-style-type: none"> Always maintain the site camp perimeter fence. Allow for fauna migration. A Clearview fence is recommended, as it will not obstruct the species migration corridors. 	PM, CM, & SHE Officer	Site Camp layout plan. Ensure that correct fence is used, as well as away from migration corridors	During site establishment	ECO	Monthly	Images, and Construction Site Camp layout plan
<ul style="list-style-type: none"> The construction site camp must be established away from grave sites or suspected grave sites at a distance of at least more than 50m from the nearest grave. 	PM, CM and SHE officer	Site screening and obtaining PTO.	During site establishment	ECO	Once	PTO Letter, and photograph.
<p style="text-align: center;">SITE CAMP</p> <ul style="list-style-type: none"> The construction site camp must have: site office, demarcated site for parking and maintenance of vehicles, refuse bins and skips, employee welfare facilities (ablution, shelter, water), refueling area and sign; designated smoking area. 	PM, CM, & SHE Officer	Construction Site Camp layout plan	During site establishment	ECO	Monthly	Images and adherence to Construction Site Camp layout plan.

<p>SANITATION AND ABLUTION</p> <ul style="list-style-type: none"> • Mobile chemical toilets must be provided onsite, with a minimum ratio of one toilet per 15 staff members, male and female separately. • Mobile toilet must be serviced at regular intervals by approved service provider. • Mobile toilets must be placed at least 20m away from the watercourse. • An impervious layer should be placed underneath to minimize seepage of leakages from the ablution facilities. • Workers should be provided with adequate sanitation station. 	<p>PM, CM and SHE Officer</p>	<p>Provision of toilets close to working areas during the project.</p>	<p>Duration of a project</p>	<p>ECO</p>	<p>Monthly</p>	<p>Images, Service Certificates and service agreement letter.</p>
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13.5 Site access and movement of construction vehicles

Table 10: Access to construction site

Impact Management Outcome: Access to sites have zero to minimal environmental impacts for the duration of the project.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The appointed contractor should make use of existing routes and entrance to the proposed site. Construct approved vehicle turning areas, and erect relevant road safety signage at strategic points to accommodate traffic. Construction staff may only use authorized paths and roads. Rehabilitate the temporary internal access road(s) as soon as completion of the construction work in those sections. 	PM, CM, ECO, and SHE Officer	<p>Permission of access.</p> <p>Implement rules to be applied to all drivers including the delivery personnel.</p> <p>Temporary road signs.</p>	Initial contracts meeting	ECO	Monthly	<p>Accommodation of traffic/ no incidents. Site rules and registers.</p> <p>Photographs, and permission of access.</p> <p>Adherence to rehabilitation plan.</p>

14 CONSTRUCTION PHASE

14.1 Storages, Stockpiling, and Material Hauling

Table 11: Storages, stockpiling and material hauling

Impact Management Outcome: All the storage, stockpiling and transportation of all materials will be managed to ensure zero to minimal negative environmental impacts.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Hazardous materials must be stored in a secure storage and have MSDSs. Hazardous material must be stored in secure tight containers on liquid tight flooring to prevent seepage into the ground. All diesel and other liquid fuel, oil and hydraulic fluid must be stored in appropriate storage tanks or in bowsers. The hazardous storage should be at least 10m away from the no go areas on site. 	CM & SHE Officer	Restricted access to hazardous materials. MSDS recommendations	Construction Phase	ECO	Monthly	Photographs, MSDS and Hazardous Chemical Substances (HCS) list

Impact Management Outcome: All the storage, stockpiling and transportation of all materials will be managed to ensure zero to minimal negative environmental impacts.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance. Also, must be always available. The responsible operator must have the required training to make use of the spill kit in case of emergency situation; A spill contingency plan should be compiled, and construction workers should be trained about the provision of the plan, this can be done to mitigate the possibilities of water pollution. 	CM and SHE Officer.	Fuel and other hazardous materials must be stored on a bunded area.	Construction Phase	ECO	Monthly	Photographs, spill contingency plan and attendance register.
<ul style="list-style-type: none"> Stockpiles and storage yards must be demarcated in areas already disturbed or where they will cause minimal disturbance. 	ECO, SHE Officer & CM	Checklist for storage and stockpiling. Demarcate areas and limit these	Construction Phase	ECO	Monthly	Photographs and checklists

Impact Management Outcome: All the storage, stockpiling and transportation of all materials will be managed to ensure zero to minimal negative environmental impacts.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> • Stockpiles should not exceed 1.5 meters and should not obstruct natural water pathway. • Create a channel for runoff to avoid numerous runoff channels that erode the stockpiles. • Waste storage must be stored so as to prevent leakages or being blown away. • Stockpiles stored along the road should not obstruct community from accessing their properties. • If the stockpiles are to be stored in the private property, the contractor should have landowner's consent. 		activities to single sites only.				
<ul style="list-style-type: none"> • All bulk material must be stored on site camp and move to sites only when required. Preferably between 9am and 3pm to avoid 	CM & SHE Officer	Checklist for Material Onsite. Just In Time (JIT)	Construction Phase	ECO	Monthly	Photographs, checklists and Complains register

Impact Management Outcome: All the storage, stockpiling and transportation of all materials will be managed to ensure zero to minimal negative environmental impacts.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
causing traffic congestion during peak traffic hours. • All fine products must be covered during transportation and storage.		for production method.				
• Adequate fire-fighting equipment must be made available at all hazardous storage areas;	CM & SHE Officer	Having adequate fire extinguishers on all storage areas.	Construction phase	ECO	Monthly	Checklists and Photographs

14.2 Vegetation clearance

Table 12: Vegetation clearance

Impact Management Outcome: The removal and/or disturbance of natural vegetation will be kept to a minimum to ensure zero to minimal negative environmental impacts.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Vegetation clearance for construction of CFCI Auditorium, and site camp must be minimal, and be limited only to development footprint, as approved by the project plans and site layout. 	PM, CM & SHE Officer	Site demarcation and establish no-go areas. Rehabilitation plan.	Construction Phase	ECO	Monthly	Checklist, photographs, and adherence to site project layouts and rehabilitation plan.
<ul style="list-style-type: none"> Clearance within the wetland must be limited to only clearing areas along 5m buffer servitude as demarcated and approved by project plans. 	PM, CM & SHE Officer	Site demarcation and establish no-go areas. Rehabilitation plan.	Construction Phase	ECO	Monthly	Checklist, photographs, and adherence to site project layouts and rehabilitation plan.
<ul style="list-style-type: none"> Contractor must ensure that All Red Data trees, plants or wildlife are identified and measures to protect them are in place. 	ECO, SHE Officer & CM	Conservation line to prohibit access to them.	Construction Phase	ECO	Monthly	Photographs and checklists

Impact Management Outcome: The removal and/or disturbance of natural vegetation will be kept to a minimum to ensure zero to minimal negative environmental impacts.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Construction vehicles must not transverse virgin lands and should not be stationed at the area outside construction footprint. 	CM & SHE Officer	Site rules	Construction Phase	ECO	Monthly	Site rules, no unauthorized access roads
<ul style="list-style-type: none"> The project site must be surveyed prior to construction for identification of plant SCC. And Establish buffer to section with plant SCC and declare it a no-go area. If possible, the plant species of conservation concern must not be removed or disturbed. Approval must be obtained from the ECO, before any disturbance or removal of plant species identified as SCC be relocated, by a specialized Botanist. 	CM, ECO & SHE Officer	ECO to conduct site survey along the pegged pipeline route before clearance and excavation. Buffer sensitive areas to prevent any encroachment.	Construction Phase	ECO	Monthly & <i>Ad hoc</i> basis	Checklist and photographs.

Impact Management Outcome: The removal and/or disturbance of natural vegetation will be kept to a minimum to ensure zero to minimal negative environmental impacts.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The project boundary must be demarcated and vegetation clearing as well as topsoil removal must be limited to site only. 	CM & SHE Officer	Site rules. Adherence to construction footprint	Construction Phase	ECO	Monthly	Adherence to construction footprint

14.3 Protection of Aquatic Environment

Table 13: Protection of aquatic environment

Impact Management Outcome: Zero to minimal environmental impacts on watercourses.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The NFEPA wetland must be demarcated and regarded as no go areas during construction phase. Sedimentation of nearest wetlands must be avoided by limiting vegetation clearance and excavation along the wetlands. Where practical, the use of machinery must be minimized within the 10m buffer of the wetlands nearby. Excavation work must not be done during a high rainfall period. The excavator be only position as far as possible within a riparian area. 	CM & SHE Officer	Construction site demarcation, establish no-go zones. Implement site environmental rules Rehabilitation plan.	Construction Phase	ECO	Monthly	Site demarcation, checklist, and Photographs during clearance and records of dates of excavation works within the riparian. Site Environmental Rules. No run-off

Impact Management Outcome: Zero to minimal environmental impacts on watercourses.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> All clearance and excavation within the vicinity of wetlands for the construction activities must be limited to areas as demarcated and approved by project plans. 						
<ul style="list-style-type: none"> The watercourse must be protected from direct and indirect spills, and debris from entering watercourse. Under no circumstances should there be disposal of any substance within the watercourse buffer. 	CM & SHE Officer	Site rules Spill contaminant procedures ECO to conduct the Water quality monitoring.	Construction Phase	ECO	<i>Ad hoc</i> basis	Photographs and checklists. Adherence to CEMP. Downstream Water Quality.
<ul style="list-style-type: none"> Post vegetation clearance activity, sediment barriers such as silt nets must be installed in areas sensitive to erosion to prevent stream siltation. 	CM & SHE Officer	Storm water management plan.	Construction Phase	ECO	Monthly	Photographs and checklists. Downstream Turbidity (water quality) and <i>in-situ</i> run-off.

14.4 Alteration of watercourses characteristics

Table 14: Alteration of watercourses characteristics

Impact Management Outcome: Zero to minimal impact as a result of soil removal and/ infilling or deposition within a watercourse.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The best use of engineering designs to prevent alteration of flow regime within the vicinity of the wetlands. 	PM & CM	Engineering design	Construction Phase	ECO	Monthly	Best construction practice, and adherence to project designs.
<ul style="list-style-type: none"> Stormwater management measures should be implemented in order to prevent the siltation and sedimentation of nearby watercourse during a rainy period. 	CM& SHE Officer	Stormwater management plan <i>In-situ</i> Stormwater systems	Construction Phase	ECO	Monthly	Photographs and checklists.
<ul style="list-style-type: none"> All excavation at riparian should preferably not be undertaken during wet (rainy) periods or peak flow condition. 	CM & SHE Officer	Site rules	Construction Phase	ECO	Monthly	Site rules, no signs of banks incision by erosion.

Impact Management Outcome: Zero to minimal impact as a result of soil removal and/ infilling or deposition within a watercourse.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Excavations must not be left open for an extended period, and must not be undertaken until such time that all required materials are available on-site, to facilitate immediate laying of the construction of subsurface infrastructure; 	CM	The use of Just in Time (JiT) production model	Construction Phase	ECO	Monthly	Adherence to, Construction Method statement, Excavation checklists.
<ul style="list-style-type: none"> Sediment barriers must be installed in areas sensitive to erosion to prevent stream siltation. After every rainfall event, the contractor must check the site for erosion damage and immediately repair any damage recorded. 	CM &SHE Officer	Record rain and take photographs. Progressively repair any sign of bank incision.	Construction Phase	ECO	Monthly	Rain records and site photographs

14.5 Protection of fauna species

Table 15: Fauna and red data species protection

Impact Management Outcome: Zero to minimal negative environmental impacts on all fauna and red data species.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The project area must be surveyed for potential animal SCC prior to construction to locate, capture and relocate any animal SCC. Before vegetation clearance commences, the site must be inspected for birds that might forage along the construction footprint. 	CM & SHE Officer	Checklist, Buffer and site rules	Construction Phase	ECO	Monthly	Site rules. Checklist and Photographs.
<ul style="list-style-type: none"> All construction activities must take place within an area demarcated for the development. 	SHE Officer & CM	Construction site demarcation. Establish No-go zone.	Construction Phase	ECO	Monthly	Site rules. Checklist and Photographs.
<ul style="list-style-type: none"> The Contractor must ensure that the work site is kept clean, tidy and free of rubbish at all times, to 	SHE Officer & CM	Waste management	Construction Phase	ECO	Monthly	Photographs, receipts (registers), checklists. Site Rules

Impact Management Outcome: Zero to minimal negative environmental impacts on all fauna and red data species.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
prevent attracting pests and other animals.						
<ul style="list-style-type: none"> Poaching or killing of domestic animals is strictly prohibited. 	SHE Officer & CM	Site rules	Construction Phase	ECO	Monthly	Environmental Rules Attendance Register.

14.6 Waste management

Table 16: General, hazardous and medical waste management

Impact management Outcome: All general and hazardous waste will be managed to ensure zero to minimal negative environmental impacts.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<p>General waste management:</p> <ul style="list-style-type: none"> The construction site must have sufficient bins for waste disposal. Refuse must be removed regularly to licensed landfill sites. Disposal certificates need to be kept in the Environmental File. Waste that is produced must be kept on-site and managed to prevent nuisance such as litter and dust. Waste bins need to be emptied/collected weekly at an approved landfill site Under no circumstances should waste get dumped on skips dedicated for community use or dumped on the wetland on site. 	CM & SHE Officer	Integrated Waste Management approach: segregation of waste into separate bins	Construction Phase	ECO	Monthly	Photographs, waybills (receipts) checklists. Site Rules.

Impact management Outcome: All general and hazardous waste will be managed to ensure zero to minimal negative environmental impacts.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<p>Hazardous waste:</p> <ul style="list-style-type: none"> Hazardous waste must be stored in a secured waste receptacle. All material contaminated with oils or hazardous material must be disposed of as hazardous waste. Waste bins need to be provided specifically for hazardous waste and it should be emptied regularly. Hazardous waste must be disposed of at a licensed facility and all records & disposal certificates needs to be kept in the environmental file. The storage area for hazardous waste should be bunded or have an impervious liner to prevent contamination of the soil from any hazardous material. 	SHE Officer & CM	Hazardous Waste Management	Construction Phase	ECO	Monthly	Waste manifest, disposal certificates, Registers, Checklist, and Photographs.

Impact management Outcome: All general and hazardous waste will be managed to ensure zero to minimal negative environmental impacts.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<p>Health Care (medical) Waste</p> <ul style="list-style-type: none"> The site should have a separate “one-way” waste bins to dispose of medical waste. Medical waste should not be mixed with any other waste. Waste bins must be clearly marked and stored in safe place. It should be sealed to avoid any scavenging. Waste bins need to be emptied weekly to a registered landfill site. Medical waste must be disposed at the designated landfill site. Service provide for collection of waste must provide proof of safe disposal at approved waste facility. 	SHE Officer & CM	Health Care Waste Management Plan	Construction Phase	ECO	Monthly	Waste manifest, disposal certificates, Registers, Checklist, and Photographs.

14.7 Heritage and/or archaeological sites

Table 17: Heritage and archaeological resources

Impact Management Outcome: Zero to minimal negative impacts on heritage resources, especially graves around the project area.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Special care must be taken during the digging and excavating of foundations, trenches, and removal of overburden not to intrude fossiliferous layers. If any artefact is discovered on site, work in the immediate vicinity shall be stopped immediately. Immediately report such discoveries to the ECO who will inform the KwaZulu-Natal Amafa and Research Institute. Work may only resume once clearance is given in writing. 	PM, ECO, CM, SHE Officer & Heritage Practitioner	Site rules	Construction Phase	ECO	Monthly	Checklist, reports and photographs.
<ul style="list-style-type: none"> The construction site camp must be established away from grave sites or suspected grave sites at a 	PM, CM, ECO	Site screening and obtaining PTO.	Pre-construction (site establishment).	ECO	Once	PTO Letter, and photograph.

Impact Management Outcome: Zero to minimal negative impacts on heritage resources, especially graves around the project area.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
distance of at least more than 50m from the nearest grave.						
<ul style="list-style-type: none"> Regular Archaeological watching briefs should be carried out during construction in case any chance findings are made. 	PM, CM, ECO	Site screening	Construction Phase	ECO	Monthly	Photographs and checklists
<ul style="list-style-type: none"> Engagement with the households around the project area for assistance in identifying all unmarked grave that could be in project footprint. 50 metres buffer should be created, and such areas must be marked as “No-Go” areas. 	PM, CM, & Social facilitator	Community Participation and Site planning	Construction Phase	ECO	Monthly	Meeting attendance register

14.8 Soil Stockpiles

Table 18: Soil management during excavation

Impact Management Outcome: Soil conservation and prevention of soil erosion						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Prior to commencing with earthworks, the topsoil must be stripped and stockpiled separately from subsoil, if necessary. And must be kept for use during rehabilitation of disturbed areas. 	CM, SHE Officer	Site rules. Rehabilitation Plan.	Construction Phase	ECO	Monthly	Checklist and photographs
<ul style="list-style-type: none"> Excavated material including topsoil must be stockpiled in stockpiles not exceeding 2m in height, in a flat area and they should be at least 15m away from the wetland. 	CM & SHE Officer	Checklist and site rules.	Construction Phase	ECO	Monthly	Checklist and photographs.
<ul style="list-style-type: none"> If at risk of being eroded, all stockpiles must be secured with sandbags around the base of the soil stockpile. And regularly be 	CM & SHE Officer	Site Rules, and Checklist	Construction Phase	ECO	Monthly	Checklist, and Photographs.

Impact Management Outcome: Soil conservation and prevention of soil erosion						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
monitored to be kept free of weeds and invasive alien plants.						

14.9 Backfilling of trenches and site levelling

Table 19: Backfilling of trenches and construction site levelling

Impact Management Outcome: Soil conservation and prevention of soil erosion						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Excess sand and soil resulting from levelling activities of the work area should be stored in low heaps (less than 2m in height) either on the access road or already disturbed area. 	CM & SHE Officer	Checklist	Construction Phase	ECO	Monthly	Checklist and photographs.
<ul style="list-style-type: none"> If there is requirement for backfill material, they must be imported from an approved borrow pit. 	CM & SHE Officer	Checklist and Rehabilitation Plan.	Construction Phase	ECO	Monthly	Checklist, Waybills and photographs.

14.10 Air quality

Table 20: Air quality management

Impact Management Outcome: Air pollution is minimized through the application of dust suppression measures and good vehicle maintenance						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The contractor should ensure the minimization of dust generating activities during high winds. Minimising vegetation clearance, implement clearing in stages, at the areas demarcated for project and apply dust suppression actions when required to stabilise cleared soil. Biodegradable dust nets should be installed around the site to trap dust generated in the construction area. Surrounding neighbours must be informed prior if excessive dust will be generated. Soil stockpile be wetted for dust suppression. Speed limit must be limited to 20km/h within the construction site to prevent generation of dust. 	CM & SHE Officer	Dust suppression.	Construction Phase	ECO	Monthly	Checklist and photographs. No complaint

Impact Management Outcome: Air pollution is minimized through the application of dust suppression measures and good vehicle maintenance						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible Person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Control dust emanating from stockpiles, construction access roads, site construction activities, and from movement of construction vehicles. 	CM & SHE Officer	Dust suppression, Stockpile checklist, and regular cleaning of construction vehicles.	Construction Phase	ECO	Monthly	Checklist and photographs. Zero complaints
<ul style="list-style-type: none"> All fine products must be covered during transportation. 	CM & SHE Officer	Site Rules and Checklist	Construction Phase	ECO	Monthly	Checklist and photographs.
<ul style="list-style-type: none"> Under no circumstances should there be open fires at construction sites. Cooking must be done at designated areas under controlled conditions to avoid spreading of fires. 	CM & SHE Officer	Site Rules	Construction Phase	ECO	Monthly	Photographs. Zero complaints

14.11 Servicing and re-fuelling of construction plants and vehicles

Table 21: Servicing and refuelling

Management Impact Outcome: Avoid or minimise soil, surface water, and groundwater contamination						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Designate a bunded area for servicing of vehicles at the construction site camp. Dip trays should be used in case of emergency repairs outside the workshop area. Check vehicles regularly for fuel and oil leaks and repair immediately, or/and place dip trays underneath to prevent percolation of oil leaks. 	CM & SHE Officer	Checklist, Portable Spill Clean-up Kits and dip trays	Construction Phase	ECO	Monthly	Checklist, Photographs Zero incidents
<ul style="list-style-type: none"> Vehicles should only be refueled by means of a pump and in a bunded area created for refueling. 	CM & SHE Officer	Site Rules, Spill kits Checklist	Construction Phase	ECO	Monthly	Photographs Checklists
<ul style="list-style-type: none"> In case of oil spillages on site, a spill kit should be used to clean the spillage. Treat and dispose contaminated soil and materials used as hazardous waste. 	PM, CM & SHE Officer	Spill Contaminant Procedure	Construction Phase	ECO	Monthly	Incident Register Checklist Photographs.

14.12 Sanitation and Ablution

Table 22: Sanitation and ablation

Management Outcome: Clean and well-maintained toilet facilities are available to all staff so to minimize the risk of disease and impact on the environment.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Construction workers must make use of ablation facilities provided by the contractor all the time. Under no circumstances may nearby residential ablutions, open areas or bushes be used as a toilet facility. 	PM and SHE officer	Strict rules on the use of the provided ablation facilities.	Ongoing	ECO	Monthly	Images, filling records, environmental complains register
<ul style="list-style-type: none"> Toilets must be located no closer than 20m to any water body. Toilets must be secured to ground to prevent them from toppling. 	PM and SHE officer	Impervious line underneath the toilet facility & site rules	Ongoing	ECO	Monthly	Images, filling records.
<ul style="list-style-type: none"> No spillage should occur when the toilets are cleaned or emptied. Toilets must be emptied on a weekly bases by a competent service provider. The service provider must provide proof from the Wastewater treatment Works (WWTW) where Ablution waste is emptied. Waybills should be kept inside the environmental file. 	PM and SHE officer	Toilets must be kept in good working condition and cleaned regularly.	Ongoing	ECO	Monthly	Images, filling records, waybills and service agreement letter

14.13 Fire prevention

Table 23: Fire prevention

Management Impact Outcome: Prevention and control of fires and the spread of fires						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Under no circumstances should there be fire on site camp and working area. The contractor must ensure that there is adequate fire-fighting equipment at the fuelling station and hazardous material storage area. Such as a fully serviced fire extinguisher. No open fires for heating or cooking will be permitted on site, unless otherwise agreed and then only designated areas, under controlled conditions. 	CM & SHE Officer	Site Rules, Checklist and Emergency Preparedness Plan	Construction Phase	ECO	Monthly	Checklist, Photographs, Zero Incidents
<ul style="list-style-type: none"> Smoking must be prohibited in the vicinity of flammable substances. A designated area for smoking should be established on site, 30m away from Hazardous substance storage area. 	CM & SHE Officer	Site Rules and Designated Smoking Areas	Construction Phase	ECO	Monthly	Photographs Checklists

<ul style="list-style-type: none"> The workforce must be regularly made aware of fire prevention and basic firefighting measures. 	SHE Officer	Emergency Preparedness Plan	Construction Phase	ECO	Monthly	Induction Register
<ul style="list-style-type: none"> Emergency procedure must in place and communicated to all persons onsite. 	SHE Officer	Induction, toolbox talks, simulation excise/drill	Construction Phase	ECO	Monthly	Attendance Register

14.14 Public safety and traffic accommodation

Table 24: Public safety and traffic accommodation

Management Impact Outcome: Management of traffic during construction to minimise disruptions and safety risks to all nearby residents.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> • Stockpiles should be stored away from the road as much as possible to prevent injuries on pedestrians. • There should be a security personnel all the time to prevent public from trespassing in the construction area. • All excavations should be barricaded with danger tapes. • Along the Mississippi road, all construction work must be done in accordance with DoT standards. 	CM & SHE Officer	DoT standards Construction Method Statement Safety Standards	Construction Phase	ECO	Monthly	Construction Method Statement. Photographs, Checklists, no complaint.
<ul style="list-style-type: none"> • Should there be any stockpile material to be placed 3m closer to the Mississippi road, these materials should be barricaded, and danger signages should be visible around them. 	CM & SHE Officer	Checklist Construction Method Statement Safety Standards	Construction Phase	ECO	Monthly	Checklist, register, photographs, no incident

Management Impact Outcome: Management of traffic during construction to minimise disruptions and safety risks to all nearby residents.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Prevent motor vehicle incidents to the public, at construction vehicle turning point from main road to site and from site to main road. 	PM, CM & SHE Officer	Temporary traffic signs at strategic points from both side of the traffic. Flagmen during turning of large haulers.	Construction Phase	ECO	Monthly	Photographs, Zero incidents
<ul style="list-style-type: none"> Establish the temporary speed limit at an approach to construction vehicle turning point. To be adhered to make sign visible to all motorists. 	CM & SHE Officer	Temporary traffic sign with speed limit.	Construction Phase	ECO	Monthly	Photographs, Zero incidents
<ul style="list-style-type: none"> Temporary signing, traffic control signals, delineators, message boards, used for traffic accommodation in the work zone shall be visible by motorists and pedestrians. 	CM & SHE Officer	Adhere to safety standards	Construction Period	ECO	Monthly	Checklist, Photographs

14.15 Invasive alien species

Table 25: Control of invasive alien species

Management Impact Outcome: Prevent the spread of invasive alien plants						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The spread of invasive alien plants must be prevented by avoiding excessive vegetation clearing and leaving areas open. All invasive alien plants must be removed from areas under construction. The control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs. 	CM & SHE Officer	Method statement for management of alien plants	Construction and rehabilitation phase	ECO	Monthly	Checklist, photographs
<ul style="list-style-type: none"> Manual methods such as cutting, weeding out, hoeing or pulling out by hand of invasive plants are recommended. 	PM, CM & SHE Officer	Method statement for management of alien plants	Construction and rehabilitation phase	ECO	Monthly	Checklist, photographs
<ul style="list-style-type: none"> Care must be undertaken so that soil stockpiles are not kept for extended periods as invasive alien 	PM, CM & SHE Officer	Checklist, JIT Method and Rehabilitation plan	Construction and	ECO	Monthly	Checklist, photographs

Management Impact Outcome: Prevent the spread of invasive alien plants						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
plants will germinate and grow on such stockpiles.			rehabilitation phase			
<ul style="list-style-type: none"> Minimise movement of topsoil from one area to another to prevent the spread of invasive alien plants. Regular monitoring of the wetland perimeters for any weeds or alien plant is mandatory and should form part of site environmental officer weekly activity. 	PM, CM & SHE Officer	Method statement for management of Alien Plants		ECO	Monthly	Registers and checklist

14.16 Noise pollution

Table 26: Noise management during construction

Management Impact outcome: To minimise or prevent unacceptable noise levels during construction activities and at certain times of the day or week.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Construction Activities must take place strictly from 07h00 – 17h00. Construction workers should avoid shouting or loud conversations especially in the early or late hours of the day. 	CM and SHE officer	Site Rules	Ongoing	ECO	Monthly	Time sheets & Zero complaints
<ul style="list-style-type: none"> Minimise noise from construction activities to avoid impacts on human health and well-being. If certain construction activities require work outside the stipulated hours, all adjacent landowners must be informed prior to commencement of such activities. 	CM, SHE officer and CLO	Commencing of any particularly noisy part of the activity (such as use of a masonry saw or jack hammer) must be after 09h00, and not on Sundays.	During site establishment and ongoing	ECO	Monthly	Zero complaints Filling records.
<ul style="list-style-type: none"> Minimize noise emanating from construction vehicles and equipment. 	CM	All equipment, vehicles, equipped with sound mufflers if necessary.	Construction phase	ECO	Monthly	Zero complaints, photographs, records.

15 POST CONSTRUCTION

15.1 Rehabilitation and Landscaping

Table 27: Rehabilitation and Landscaping of the affected areas

Management Impact outcome: Remediate/rehabilitate any negative environmental impacts at the site						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> All the areas that are affected by the construction activities must be subjected to rehabilitation and landscaping. Project must be timed so that rehabilitation can take place at the optimal time for vegetation establishment. 	CM & SHE Officer	Rehabilitation plan	During site camp decommissioning	ECO	Upon completion of the project	Close-out report Checklist, photographs
<ul style="list-style-type: none"> The stockpiled topsoil must be used for landscaping of the affected areas in the site camp and housing area. Before placing topsoil, all visible weeds must be removed in accordance with the approved method statement for management of alien vegetation. 	CM & SHE Officer	Method statements Rehabilitation Plan	Once, & during site camp decommissioning	ECO	Upon completion of the project	Checklist, photographs
<ul style="list-style-type: none"> All the Pavements must be monitored for any weeds or alien 						

<p>plants germinating and it should be removed and disposed according to method statement for management of alien plants.</p>						
<ul style="list-style-type: none"> The contractor should ensure monitoring of wetland for any environmental transgression that may have occurred during construction phase, this includes inter alia, siltation, contamination, geological instability, growth of alien invasive plants and erosion gullies forming. 						

15.2 Site clean-up

Table 28: Site clean-up and rehabilitation

Management Impact Outcome: Site restoration to approximate original state						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The contractor must ensure that all temporary structures, materials, waste, and facilities used for construction activities are removed upon completion of the project. All waste must be disposed of responsibly, following five-step hierarchy of waste management. All remaining construction infrastructure, rubble and waste must be removed from the site and be disposed at a registered waste site and certificates of disposal must be provided. The certificate of completion must not be issued until the rehabilitation is completed, inspected and declared complete by the ECO. 	PM, CM & SHE Officer	Rehabilitation plan	During site decommissioning	ECO	Upon completion of the project	Checklist, photographs

16 OPERATIONAL PHASE

16.1 Soil Erosion

Table 29: Soil erosion

Management Impact Outcome: Maintenance of site to meet its intended purpose during operation						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Best construction practice of storm water system and make provision for erosion protection by Installation of gabion baskets and mattresses, energy dissipaters and grass lined drains. Stormwater management through regular inspection for evidence of sediment and debris build-up during wet season. 	PM	Engineering Design and Storm Water Management Plan.	Throughout the project lifecycle	PM	Throughout the project lifecycle	Storm Water Management Plan. Design standards, and best construction practice

16.2 Proliferation of alien plant species

Table 30: Proliferation of Alien plant species

Management Impact Outcome: Prevent the spread of invasive alien plants						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Regular monitoring of the project footprint is recommended to check for infestation of alien plants. Detected alien plants must be removed and disposed of in accordance with alien plants management plan. Alien plants around the wetland area must be removed using mechanical tools. Under no circumstances should chemical tools be used to remove alien plants around site. 	PM	Rehabilitation plan and alien plant management plan.	Throughout the project lifecycle	PM	Throughout the project lifecycle	No weed infestation and alien plant proliferation.

16.3 Flora and Fauna protection

Table 31: Flora and Fauna Protection

Management Impact Outcome: Protection of Flora and Fauna species during operation						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> Hunting/snaring of any animal species is strictly prohibited. Any person found hunting or in the possession of any indigenous animal (including invertebrate taxa) and domestic animals must face disciplinary measures, following the possible dismissal from the site. Trees on the footprint of the area should be preferably left unaffected during the operation phase to accommodate bird species that had temporarily vacate the area during the construction phase. 	PM	Site rules.	Throughout the project lifecycle	PM	Throughout the project lifecycle	Photographs

16.4 Surface and Ground Water Quality

Table 32: Surface and Ground Water Quality

Management Impact Outcome: Maintenance of site to meet its intended purpose during operation						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The church auditorium must have sufficient, adequate waste bins and waste skips, and area must have signage discouraging littering and illegal dumping especial on the wetland area. Sewer infrastructure must be regular maintained to prevent leakage and clogging. Parking areas for church attendances must be paved to prevent accidental hydrocarbon spillages and possible contaminate the wetland. Chemical storage area should be properly bunded and the spill kit should always be available on site should there be any spillages. 	PM	Engineering designs, stormwater management plan, waste management method statement and spill management.	Throughout the project lifecycle	PM	Throughout the project lifecycle	Photographs, checklist, bins and waste skips and no contaminated soils.

16.5 Waste Management

Table 33: Waste Management

Management Impact Outcome: Maintenance of site to meet its intended purpose during operation						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> The church auditorium must have adequate bins or waste skips within a walking distance of the site. These bins and skips should be emptied regularly to avoid attracting birds, insects and other domestic animals. Under no circumstances should waste be littered in the stormwater trench. Signage should be erected at the stormwater trench periphery to warn congregants and any personnel on the property not litter in the watercourse but to use the waste bins provided. Regular monitoring of the stormwater trench for any waste littered is recommended and clean-ups should be undertaken immediately. 	PM	Sufficient bins and waste skips	Throughout the project lifecycle	PM	Throughout the project lifecycle	No waste litter and no complains

16.6 Noise Pollution

Table 34: Noise Pollution

Management Impact Outcome: Minimize noise pollution to regulated standards.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<p>Provide sound insulation design which comprises of measures to minimize the noise pollution to the site boundaries as dictated by the by-law requirements and to reduce rain and hail impact noise. By;</p> <ul style="list-style-type: none"> • Ensuring that all gaps in the brick wall and between the wall and steel roof are well sealed. • Ensuring that the building has none-openable windows. • All seals must run the full extent of the door edge to avoid gaps. The door must have a sprung latch operated by a door handle. • The roof structure (including any vertical soft roof elements) should have a composition, with all gaps and joints sealed airtight. To optimise the sound insulation that 	PM	Adherence to acoustic design plan	Throughout the project lifecycle	PM	Throughout the project lifecycle	No complains

Management Impact Outcome: Minimize noise pollution to regulated standards.

Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<p>can be achieved from this construction. 50mm 80kg/m³ Factory board (tissue facing version NOT FOIL FACING) be used instead of the 100mm ISOVER Energy lite. Also, mass layers will also provide rain and hail impact noise mitigation.</p> <ul style="list-style-type: none"> For internal acoustic treatment it is recommended that the full ceiling area should be utilised for acoustic absorptive surface treatment with a sound absorptive material that can provide minimum NRC = 0.8 performance. The critical wall treatment areas include the back and side walls of the chapel. Approximately 100m² of surface treatment should be applied to the back wall and approximately 50m² per side wall of surface treatment will be required. To minimise the standing 						

Management Impact Outcome: Minimize noise pollution to regulated standards.						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<p>wave that may be created by the band on stage, the side walls of the stage should be tilted between 5-7 degrees upward.</p>						

16.7 Traffic Accommodation

Table 35: Traffic Accommodation

Management Impact Outcome: Maintenance of site to meet its intended purpose during operation						
Impact Management Actions	Implementation			Auditing		
	Responsible Person	Method of Implementation	Implementation Period	Responsible person	Frequency	Proof of compliance
<ul style="list-style-type: none"> • During church services, attendances should make use of provided church auditorium parking areas. • Under no circumstances should vehicles be parked in the wetland periphery or a 5m wetland buffer. • If there is a need to use nearby properties for vehicle parking, there should be a written consent from the property owner. • No cars should be parked across the main road to minimized traffic congestion. 	PM	Traffic Management plan	Throughout the project lifecycle	PM	Throughout the project lifecycle	No complains

17 MONITORING

Monitoring will be undertaken to determine whether construction activities are impacting on the environment and that the EMPr is being implemented. Therefore, the preparation of a monitoring plan as part of an EMPr will ensure that the monitoring is conducted effectively and consistently and will deliver reliable, good quality data. Monitoring, in the broad sense, can also include visual evidence as well as a complaint register.

Monitoring will be an ongoing process to ensure that non-conformity is corrected, and necessary steps are taken timeously, to prevent further environmental degradation.

18 CONCLUSION

The application of the measures outlined in this Environmental Management Programme (EMPr) must ensure that the operation will have a minimal impact on the environment. If the measures outlined are not strictly adhered to, the contractor or responsible party can be charged and fined in terms of applicable legislation, and the project stopped. This EMPr will, therefore, administer and manage all activities on the project site and the actions of all the employees and agents of the Contractor.

This EMPr specifies the minimum environmental requirements to be implemented by the applicant as per the scope of works of the EMPr, in order to minimize and manage the potential environmental impacts and ensure sound environmental management practices are adhered to. It is essential that the EMPr requirements are carefully studied, understood, implemented, and adhered to at all the time by all relevant parties on this project.