

**ENVIRONMENTAL MANAGEMENT PROGRAMME
(EMPR)**

FOR

**PROPOSED TOWNSHIP ESTABLISHMENT ON
REMAINDER OF PORTION 43 OF THE FARM
WATERVAL 306JQ AND PORTION 7 OF THE FARM
BOSCHDAL 309JQ (ADJOINING), RUSTENBURG
LOCAL MUNICIPALITY, NORTH WEST PROVINCE.**

JANUARY 2023



Address: P.O. Box 1322, Ruimsig, 1732

Tel: 082 850 5482

Fax: 086 692 8820

paulette@hydroscience.co.za

TABLE OF CONTENTS

LIST OF ACRONYMS AND DEFINITIONS	iv
GLOSSARY OF TERMS	vi
1 INTRODUCTION	1
1.1 Project Description.....	1
1.2 Project Location	1
1.3 Objectives of the EMPr.....	4
1.4 EMPr compilation.....	4
1.4.1 Details	4
1.4.2 Experience and Expertise	5
1.5 Alterations to the EMPr.....	5
2 LEGAL REQUIREMENTS	6
3 ROLES AND RESPONSIBILITIES	7
3.1 Role of the Project Manager (PM).....	7
3.2 Role of the Contractor’s Representative	7
3.3 Role of the Environmental Control Officer (ECO)	8
4 DOCUMENTATION AND REPORTING COMPLIANCE.....	9
4.1 Required Documentation.....	9
4.2 Environmental Incidents	9
4.3 Non-conformance	10
4.4 Emergency Response Action Plan (ERAP)	10
4.5 Method Statements.....	11
4.6 Environmental Audits.....	12
4.7 Communication and Liaison with I&APs	12
4.8 Compliance Requirements, Penalties and Fines	12
4.9 Programme for Reporting on Compliance	13
4.10 Environmental Awareness Plan	13
5 IMPACT MANAGEMENT OUTCOMES AND ACTIONS	14
5.1 Activities causing potential impacts.....	14
5.2 Potential Impacts	14

5.2.1	Negative Impacts	14
5.2.2	Positive impacts.....	14
5.3	Management measures.....	15
6	Conclusions & recommendations	55

LIST OF FIGURES

Figure 1-1: Layout Plan	2
Figure 1-2: Property Locality	3

LIST OF TABLES

Table 5-1: Potential impacts and proposed management actions: Pre-Construction Phase.	16
Table 5-2: Potential impacts and proposed management actions: Construction Phase.....	18
Table 5-3: Potential impacts and proposed management actions: Operational Phase	52

LIST OF ACRONYMS AND DEFINITIONS

AIS	Alien and Invasive Species Regulations (2020)
AIP	Alien and Invasive Plant
CBA	Critical Biodiversity Area (terrestrial and aquatic areas required to meet biodiversity targets for ecosystems, species or ecological processes, as identified in a systematic biodiversity plan)
DFFE	Department of Forestry, Fisheries and the Environment (national authority responsible for environmental protection and implementation of NEMA)
DWS	Department of Water and Sanitation (national authority responsible for water protection and implementation of NWA, custodian of South Africa's water resources)
EA	Environmental Authorisation (the statutory authorisation for the execution of the development activity, in terms of NEMA as amended.
EAP	Environmental Assessment Practitioner (independent consultant administering NEMA processes on behalf of applicant)
EAPASA	Environmental Assessment Practitioner Association of South Africa, registration required in terms of Regulation 15(1) of the Section 24H Registration Authority Regulations (Regulation 849, Gazette 40154 of 22 July 2016), of the NEMA
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment (process required in terms of NEMA to obtain authorisation for listed activities)
EMPr	Environmental Management Programme/Plan
EO	Environmental Officer
ERAP	Emergency Response & Action Plan
HC	Hydrocarbons
HCS	Hazardous Chemical Substance
HOA	Home Owners Association
IAIA	International Association of Impact Assessment
I&APs	Interested and Affected Parties (as identified during the Public Participation Process)
IBA	Important Bird Area
Listed Activities	Activities identified in terms of NEMA Sections 24 and 24D, which require environmental authorisation prior to commencement due to their potential environmental impacts. See GNR 324, 325, 326, 327
MBR	Magaliesberg Biosphere Reserve
MPE	Magaliesberg Protected Environment
MSDS	Material Safety Data Sheets
NCR	Non-conformance Report
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998) – overarching environmental legislation in South Africa

NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
NEM:PAA	National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act 59 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act 25 of 1999)
NWA	National Water Act, 1998 (Act 36 of 1998)
NW DEDECT	North West Department of Economic Development, Environment, Conservation & Tourism
OHSA	Occupational Health and Safety Act, 1993 (Act 85 of 1993)
PM	Project Manager: the person responsible for coordinating on-site activities, as well as overseeing any transgressions of these activities with the EMP. During construction, the project manager is likely to be the Engineer.
PPE	Personal Protective Equipment
RLM	Rustenburg Local Municipality
SACNASP	South African Council for Natural Scientific Professions (body for the registration of professional natural scientists, in terms of Section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003))
SAHRA	South African Heritage Resources Agency (authority responsible for implementation of NHRA)
SAHRIS	South African Heritage Resources Information System (electronic system onto which reports are loaded for comments from SAHRA)
SABS	South African Bureau of Standards
SANS	South African National Standards
SCC	Species of Conservation Concern
SDP	Site Development Plan
SHEQ	Safety, Health, Environment & Quality
SWMP	Storm Water Management
WCMR	Waste Classification and Management Regulations
WUL	Water Use License

GLOSSARY OF TERMS

Applicant	The entity applying for authorisation to undertake the activities listed under the NEMA EIA Regulations, as outlined in the Scoping and Environmental Impact Reports. In this case, the Applicant is Schoongezigt Rustenburg Developers (Pty) Ltd.
Biodiversity	Diversity of genes, species and ecosystems on earth, and the ecological and evolutionary processes that maintain this diversity.
Building and demolition waste	In terms of the NEM:WA is defined as waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition, which include: <ul style="list-style-type: none">• discarded concrete, bricks, tiles and ceramics;• discarded wood, glass and plastic;• discarded metals;• discarded soil, stones and dredging spoil; and• other discarded building and demolition wastes.
Business waste	Waste that emanates from premises that are used wholly or mainly for commercial, retail, wholesale, entertainment or government administration purposes (NEM:WA).
Clearing	Means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified.
Competent Authority	Defined in terms of section 1 of NEMA as the organ of state charged with evaluating the environmental impact of that activity and, where appropriate, with granting or refusing an environmental authorisation in respect of that activity. This entity fulfils the administrative function of registering, considering and approving (where applicable) all documentation related to the environmental impact assessment. In this instance this role is fulfilled by DFFE.
Construction wastes	Includes the following waste generated from construction activities: <ul style="list-style-type: none">• wastes from bituminous mixtures, coal tar and tarred products• discarded metals (including their alloys)• waste soil (including excavated soil from contaminated sites), stones and dredging spoil• wastes from insulation materials and asbestos-containing construction materials• wastes from gypsum-based construction material• wastes from other construction and demolition (NEM:WA)
Contractor	Companies and/or individuals appointed on behalf of the Developer to undertake construction activities, as well as their sub-contractors and suppliers.
Domestic waste	Means waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, retail, commercial or recreation purposes generated directly by the consumption of products for domestic use.

Environment	In terms of NEMA means the surroundings within which humans exist and that are made up of: <ol style="list-style-type: none"> i. the land, water and atmosphere of the earth; ii. micro-organisms, plants and animal life; iii. any part or combination of (i) or (ii) and the interrelationships among and between them; iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing (including the social, economic, cultural, historical, and political circumstances, conditions and objects affecting the existence and development of an individual, organism or group).
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.
Environmental impact	A change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.
General waste	In terms of NEM:WA, means waste that does not pose an immediate hazard or threat to health or to the environment, and includes- <ul style="list-style-type: none"> • domestic waste; • building and demolition waste; • business waste; • inert waste; or • any waste classified as non-hazardous waste in terms of the NEM:WA Waste Classification and Management Regulations (WCMR), and includes non-hazardous substances, materials or objects within business, domestic, inert, building and demolition wastes.
Hazardous substance	A solid, liquid, vapour, gas or aerosol, or combination thereof, which is a source of danger to persons and to the environment, by reason of its toxic, corrosive, irritant, strongly sensitizing or flammable nature, or because it generates pressure through decomposition, heat or other means (Hazardous Substances Act, 1973 (Act 15 of 1973)).
Hazardous waste	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 and includes hazardous substances, materials or objects within business waste, residue deposits and residue stockpiles (NEM:WA).
Incident	An unexpected, sudden and uncontrolled release of a hazardous substance, including from a major emission, fire or explosion, that causes, has caused or may cause significant harm to the environment, human life or property (NEMA Section 30(1)(a) substituted by section 13(b) of Act 30 of 2013: National Environmental Management Laws Second Amendment Act, 2013).
Method Statement	A document that gives specific instructions on how to perform a work-related task. For the purpose of this EMP, the definition is expanded to include the nature of the intended actions to be carried out and allows for all parties to review and understand the procedures to be followed in order to minimise risk of harm to the environment.

Mitigation measures	Measures designed to avoid, reduce or remedy adverse impacts of activities.
Pollution	In terms of NEMA, is defined as any change in the environment caused by - 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.
Rehabilitation	The return of a disturbed area to a state which approximates the state (wherever possible) which it was before disruption.
Spoil	Excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works.
Topsoil	The upper layer of soil including the organic layer in which plants have most of their roots. It has the highest concentration of organic matter and microorganisms and may extend to a depth of up to 300mm.
Waste	In accordance with NEM:WA means: <ul style="list-style-type: none"> • any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as defined in Schedule 3 of NEM:WA; or • any other substance, material or object that is not included in Schedule 3 that may be defined as a waste by the Minister, but - <ul style="list-style-type: none"> ○ any waste or portion of waste, referred to above ceases to be waste once an application for its re-use, recycling or recovery has been approved or, after such approval, once it is, or has been re-used, recycled or recovered; ○ where approval is not required, once a waste is, or has been re-used, recycled or recovered; ○ any exempted waste or a portion of waste generated by a particular process from the definition of waste; or ○ where the Minister has, in the prescribed manner, excluded any waste stream or a portion of a waste stream from the definition of waste.

1 INTRODUCTION

1.1 Project Description

This document serves as the Environmental Management Programme (EMPr) for the Proposed township establishment on Remainder of Portion 43 of the farm Waterval 306JQ and Portion 7 of the farm Boschdal 309JQ (adjoining), Rustenburg Local Municipality, North West Province. The scope of this EMPr, compiled in accordance with the requirements in NEMA, is for all activities which are proposed to be undertaken as part of the construction and operation of the township development, and include:

- Roads over 3.8ha;
- Private open space of 19.48ha (33.2% of property) on erven 203, 204 & 205;
- Special of 2.75ha for self-storage and estate management & maintenance (erf 202);
- Special of 0.89ha for self-storage (erf 199);
- Recreational of 3.72ha (erf 200 & 201);
- Residential 2 of 3.7ha (52 units); and
- Residential 1 of 19.76ha (146 stands on 33.7% of property)

Refer to Figure 1-1: Layout Plan

1.2 Project Location

The property is located to the south of Rustenburg, about 4.4km from the Central Business District. The R24 (between Rustenburg and Johannesburg) is situated east of site and the N4 (Bakwena Platinum Highway between Rustenburg and Pretoria) north east of the site. The R104 (between Rustenburg and Pretoria) lies north east of the property. Safari Tuine, Boschdal and Cashan are residential suburbs surrounding the site to the north and east.

The project area is located north and north-east of the Kgaswane Nature Reserve and overlaps with the Magaliesberg Biosphere Reserve (MBR) core (small portions), buffer (mainly) and transitional zones. It also falls within the Magaliesberg Important Bird Area (IBA) which consists mainly of the Magaliesberg range, which extends in an arc from just North West of Rustenburg in the west to the N1 in the east near Pretoria.

Refer to Figure 1-2: Property Locality



Figure 1-1: Layout Plan - NE Town Planning & Development Consultants

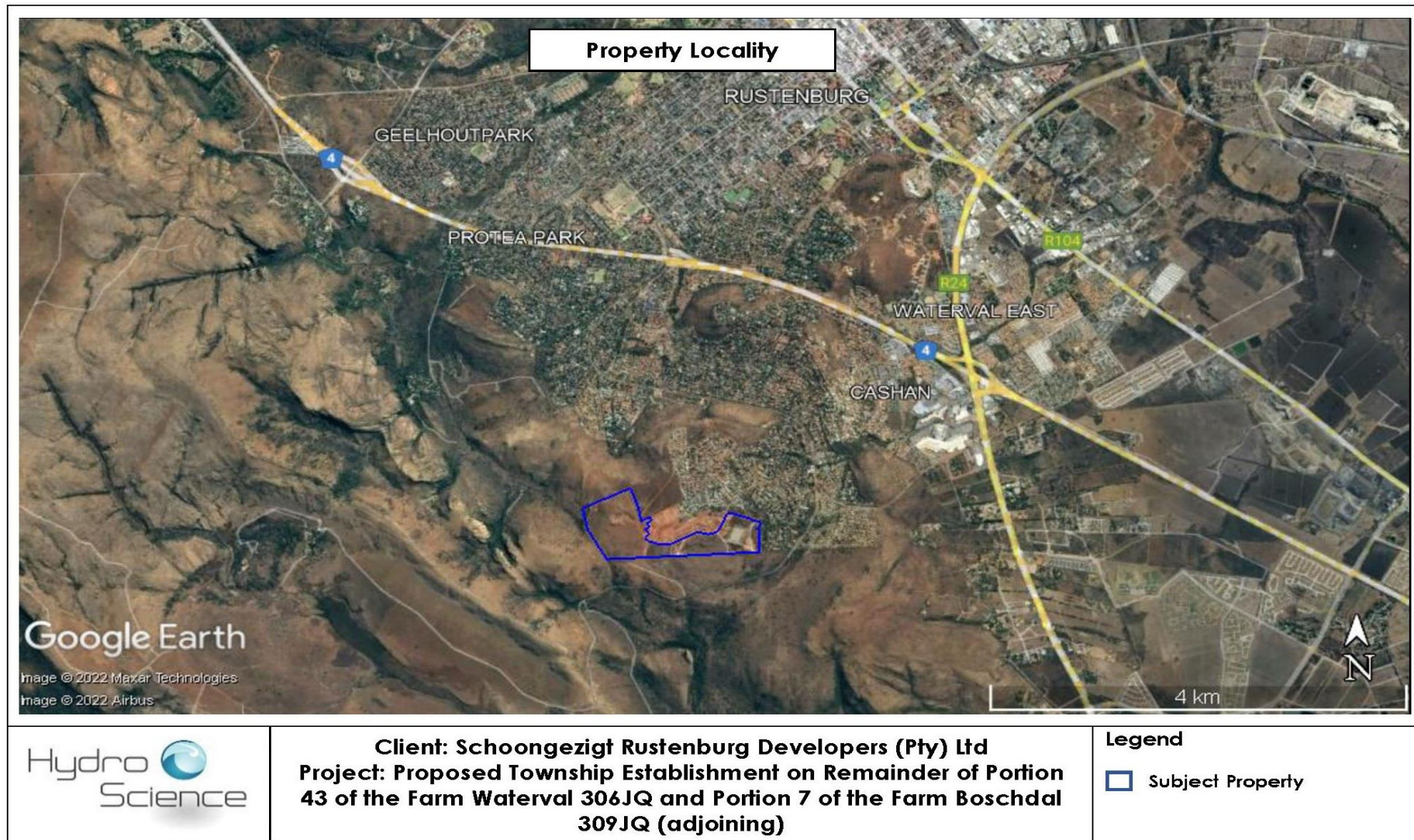


Figure 1-2: Property Locality

1.3 Objectives of the EMPr

The purpose of the EMPr is to ensure that undue or reasonably avoidable adverse impacts of the project are prevented, that impacts which cannot be prevented are managed to reduce their significance and that the positive benefits of the project are enhanced.

The EMPr will therefore:

- Define the various measures to be taken during the life of the project (before, during and after construction) in order to enhance positive and minimise adverse environmental impacts;
- Define the actions needed to implement these measures;
- Describe how this will be achieved; and
- Allocate responsibilities.

This document informs the Project Manager (PM), Contractor, Environmental Control Officer (ECO), and all other staff on site of their duties in fulfilment of legal requirements regarding the proposed development.

1.4 EMPr compilation

This document has been compiled by an independent Environmental Assessment Practitioner (EAP) in accordance with the requirements of the EIA Regulations.

1.4.1 Details

Company:	HydroScience CC
Registration Number:	2008/056910/23 14 March 2008
Email address:	paulette@hydroscience.co.za
Telephone number:	+ 27 (0) 82 850 5482
Fax number:	+ 27 (0) 86 692 8820
Contact person:	Ms Paulette Jacobs I.D. 680526 0104 08 4
Professional registration (Paulette Jacobs):	South African Council for Natural Scientific Professions (SACNASP): 400005/07 Environmental Assessment Practitioner Association of South Africa (EAPASA): 2020/357
Membership (Paulette Jacobs):	Water Institute of Southern Africa (WISA): 24906 International Association of Impact Assessment South Africa (IAIAsa): 5266

1.4.2 Experience and Expertise

HydroScience CC was established in 2008 after Ms Paulette Jacobs acted as an independent consultant (sole proprietor) since 2000. HydroScience is an environmental, water and waste management solutions provider.

Ms Paulette Jacobs obtained her qualifications from the Rand Afrikaans University in Johannesburg in 1990 and has been in the water, waste and environmental field for the last 32 years, first in research for seven (7) years at the Council for Scientific and Industrial Research (CSIR) and since then in consulting (Pulles, Howard and De Lange Water Quality Management Consultants, SRK Consulting, sole proprietor, HydroScience). Ms Paulette Jacobs assisted Department of Water Affairs and Forestry (now Department of Water and Sanitation, DWS) to compile the Best Practice Guidelines (BPG) for water resource protection in the mining industry and has successfully completed many Water Use Licence (WUL) Applications in terms of the National Water Act (NWA), 1998 (Act 36 of 1998) as well as Environmental Impact Assessments (EIA) in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended for the mining, industrial, retail, commercial/business, hospitality, education and residential sectors to obtain environmental authorisations, Atmospheric Emissions Licenses (AEL) and Waste Management Licenses (WML) over the last 22 years.

1.5 Alterations to the EMPr

As EMPrs should remain dynamic and flexible, certain conditions may require the EMPr to be revised as necessary. These conditions may include the following:

- Changes in legislation;
- Occurrence of unanticipated impacts or impacts of greater significance, intensity and extent than originally accounted for;
- Inadequate mitigation, i.e. where the level of an environmental parameter is not conforming to the required level despite the implementation of measures; and
- Secondary unexpected impacts which occur as a result of the mitigation.

2 LEGAL REQUIREMENTS

This EMPr is a legally binding document and forms an integral part of the contract documents. The EMPr is structured to provide effective control measures which align with applicable legislation.

The following non-exhaustive list of legislation is relevant to the project. The Applicant must be aware of the requirements thereof and should implement all relevant provisions.

- Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983)
- Constitution of the Republic of South Africa (CRSA), 1996 (Act 108 of 1996)
- National Environmental Management Act (NEMA), 1998 (Act 107 of 1998)
- Environmental Impact Assessment Regulations, 2014 (GNR 325 to 327 of 2017) (as amended);
- National Environmental Management: Biodiversity Act (NEM:BA), 2004 (Act 10 of 2004)
- National Environmental Management: Protected Areas Act (NEM:PAA), 2003 (Act 57 of 2003)
- National Environmental Management: Waste Act (NEM:WA), 2008 (Act 59 of 2008)
- NEM:WA Waste Classification and Management Regulations (GNR 634 of 23 August 2013)
- NEM:WA Norms and Standards for Waste Storage (GNR 926 of 29 November 2013)
- National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999)
- National Water Act (NWA), 1998 (Act 36 of 1998)
- Hazardous Substances Act, Act 15 of 1973;
- Occupational Health and Safety Act, Act 85 of 1993.

3 ROLES AND RESPONSIBILITIES

The Applicant (Schoongezigt Rustenburg Developers (Pty) Ltd) remains responsible for the management of impacts emanating from the development, as well as the implementation of the EMPr. During the construction phase, the Applicant will delegate its responsibilities to the construction Contractor.

The conditions of the EMPr must be brought to the attention of all persons (employees, workers, consultants, contractors, residents, visitors etc.) associated with the undertaking of these activities and The Applicant must take such measures that are necessary to bind such persons to the conditions thereof (contracts with penalties for non-compliances).

3.1 Role of the Project Manager (PM)

The PM is responsible for the following:

- Coordinating on-site activities and overseeing activities that can lead to possible transgressions of the EMPr;
- Ensuring that the ECO is provided with the necessary information to adequately fulfil their responsibilities;
- Ensuring that this EMPr is included in the contractual agreements with all Contractors and sub-contractors;
- Ensuring that the relevant Method Statements are provided timeously;
- Ensuring that corrective actions are implemented as required;
- Ensuring that appropriate records regarding compliance with the EMPr are maintained and made available to the ECO; and
- Ensuring that instructions as required by the ECO are carried out by the relevant Contractors and sub-contractors.

3.2 Role of the Contractor's Representative

Each Contractor involved in the project must comply with the EMPr and should therefore appoint a Contractor's Representative (the title may vary), who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr).

The Contractor's representative can be:

- The site agent;
- Site engineer;
- A dedicated environmental officer (EO); or
- An independent consultant.

The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that he/she can interact effectively with other site contractors, labourers, the ECO, authorities and the public. The Contractor's Representative must ensure that all sub-contractors working under the Contractor abide by the requirements of the EMPr and EA.

In the event of the Contractor appointing an EO, or officers, their primary role will be to coordinate the environmental management activities of the Contractor on site. The EO may also be required to perform the following roles:

- Support the ECO in the monitoring and execution of the EMPr by maintaining a permanent presence on site;

- Inspect the site as required to ensure adherence to the management actions of the EMPr and authorisations/licences;
- Complete Site Inspection Forms on a regular basis (e.g. daily or weekly);
- Provide inputs to the regular (e.g. monthly) environment report to be prepared by the ECO;
- Liaise with the construction team on issues relating to implementation of, and compliance with, the EMPr and EA and licenses;
- Maintain a record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; and
- Maintain a public complaints register in which all complaints are recorded.

3.3 Role of the Environmental Control Officer (ECO)

The Applicant shall appoint an independent ECO who will ensure that Contractors and sub-contractors comply with the measures outlined in this document. The ECO is thus responsible for ensuring that the requirements of the EMPr are implemented.

More specifically, the ECO shall:

- Request, review and approve Method Statements from the Contractor for specific activities that may impact on the environment;
- Ensure that the Contractor is given a copy of the EMPr, and all approved Method Statements;
- Undertake ongoing monitoring of the construction site and activities through monthly audits;
- Monitor compliance with the EMPr through conducting monthly audits;
- Recommend the issuing of fines where necessary;
- Recommend environmentally acceptable solutions to address non-conformances and potentially issue a recommendation to stop work to the PM, when required;
- Identify and make amendments to the EMPr, where appropriate, to be approved by DFFE;
- Attend monthly construction project meetings in order to provide feedback on the environmental performance of the site, and discuss issues which need to be actioned; and
- Compile a final close-out report providing details of compliance with the EMPr and its implementation during the construction period, which will be submitted to the Applicant at project closure.

4 DOCUMENTATION AND REPORTING COMPLIANCE

A number of reporting systems, documentation controls and compliance mechanisms are required to ensure accountable and demonstrated implementation of the EMPr.

Accurate and up-to-date records will be kept (by the EO or other appointed contractor's representative) of all system malfunctions resulting in non-compliance with the EMPr or authorisations/licences. The Applicant will also, within 24 hours, ensure that the relevant authorities are notified of the occurrence or detection of any incident which has the potential to cause, or has caused pollution of the environment, health risks or which is in contravention of this EMPr or the conditions of the EA. The Applicant is then to submit an action plan indicating measures which will be taken to:

- Correct the impacts resulting from the incident;
- Prevent the incident from causing any further impact; and
- Prevent a recurrence of a similar incident.

A complaints register will be kept on site and all complaints from the public will be noted therein as well as measures taken to rectify the situation as described above.

4.1 Required Documentation

The following documentation must be kept on site in order to record compliance with the EMPr:

- A copy of the EMPr, the EA (once issued) and any amendments;
- Copies of all other licenses/permits applicable to the project;
- Environmental Policy of the Contractor;
- Environmental Method Statements compiled by the Contractor;
- Communications Register – including records of Complaints and minutes and attendance of meetings;
- Registers of all environmental meetings;
- Monitoring Results – including environmental monitoring reports, weekly inspections, audit reports and Non-Conformance Reports (NCR);
- Written corrective actions;
- Incident reports/book– including copies of notification of Emergencies and Incidents, this must be accompanied by a photographic record;
- Waste manifest documents (including Safe Disposal Certificates);
- Material Safety Data Sheets (MSDS) for all hazardous substances;
- Dust suppression register; and
- Water Quality Monitoring reports, if required.

4.2 Environmental Incidents

The contractor's representative is required to maintain an up-to-date and current environmental incident register.

The following should be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the register;
- Significant or major incidents should also be reported to the ECO who will then provide guidance on reporting the incident to the relevant authority in accordance with NEMA section 30 and 30A

(this will be deemed to be an emergency and should be included in the Emergency Response & Action Plan (ERAP));

- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

4.3 Non-conformance

Non-conformance with the requirements of this EMPr will be highlighted during the monthly ECO audits. In the event of non-conformance, the following process should be followed:

- The ECO shall issue a NCR to the Contractor, providing details of the nature and magnitude of the contravention;
- Actions to correct the non-conformance must be undertaken within the period specified in the NCR;
- The Contractor shall provide the ECO with a written statement describing the corrective and preventative actions to be taken;
- In the event of the Contractor failing to remedy the situation within the predetermined time frame, the ECO may impose a penalty, dependant on the conditions of contract; and
- In the case of non-compliance resulting in significant pollution or degradation, the ECO shall be entitled to instruct the Contractor to stop work or the activity and immediately implement remedial actions.

The contractor's representative may also record any environmental non-conformance identified during daily / weekly inspections by means of issuing a NCR to the responsible employee or sub-contractor. The NCR should as a minimum include the following:

- Time and date of the non-conformance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action is to be completed.

Records must be kept of all corrective actions taken for non-conformances.

4.4 Emergency Response & Action Plan (ERAP)

The Contractor's ERAP must ensure appropriate responses to unexpected / accidental actions / incidents that could cause significant environmental impacts. Such incidents may include:

- Accidental discharges to water, sensitive environments;
- Accidental spillage of hazardous substances (e.g. oil, petrol, and diesel); and
- Fire incidents.

The ERAP is separate to the Health and Safety Plan as it is aimed at responding specifically to environmental incidents and emergencies, and should include the following:

- Responsibilities, accountability and liability of personnel;
- A list of key personnel and contact numbers;
- Details of emergency services, and relevant authorities (e.g. the fire department, spill clean-up services, security, NW DEDECT, DFFE, DWS);
- Internal and external communication plans, including prescribed reporting procedures;
- Actions to be taken in the event of different types of emergencies;
- Incident recording, progress reporting and remediation measures to be implemented; and
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

The ERAP must also include the process described in Section 30 and 30A of NEMA which should be undertaken in case of significant or major incidents and emergency situations. In this instance, The Applicant will, within 24 hours, ensure that the relevant authorities are notified of the occurrence or detection of any incident which has the potential to cause, or has caused pollution of the environment. The Applicant, as the holder of the EA, is then required to submit an action plan, indicating measures which will be taken to:

- Correct the impacts resulting from the incident;
- Prevent the incident from causing any further impact; and
- Prevent a recurrence of a similar incident.

4.5 Method Statements

The Contractor, with guidance from the ECO, shall ensure that suitable Method Statements are drafted for activities that could have a significant environmental impact and therefore require specific environmental controls. The Contractor must provide the required Method Statements for approval by the ECO prior to work commencing on aspects of the project identified to be of potential risk to the environment.

Method Statements should describe the scope of the intended work in such detail that the PM and ECO may understand the Contractor's intentions. Specific mitigation measures should be included which would minimise environmental impacts during these activities. This is particularly important for work undertaken close to sensitive areas (border with Kgaswane Nature Reserve).

Method Statements should clearly indicate the following:

- A brief description of the work to be undertaken;
- A detailed description of the process of work, methods and materials;
- The proposed measures to be taken to prevent any potential impacts on the environment;
- A description/sketch map of the locality of work (if applicable); and
- The sequencing of actions with due commencement dates and completion date estimates.

The Contractor shall keep all the Method Statements and subsequent revisions on file, copies of which must be distributed to all relevant personnel for implementation.

Unless otherwise indicated by the PM, the Contractor shall provide the following Method Statements to the PM and ECO prior to commencement:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Cement mixing/concrete batching/mixing;
- Dust and noise management;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Vegetation management – Protected, clearing, aliens, felling;
- Erosion control;
- Storage and handling of HCS;
- Waste management – storage, segregation, classification, transport, disposal (all waste streams)
- Sourcing of materials;
- Chance finds procedure (archaeological, cultural and heritage or palaeontological);
- Topsoil management;
- Stormwater management;
- Workshop or plant maintenance.

4.6 Environmental Audits

The ECO will conduct monthly environmental monitoring audits during the construction phase of the development to ensure that the Contractor complies with the requirements of the EMPr and EA. The ECO will provide the PM and Contractor with a written report including a photographic record and details of findings of the audit. The ECO will also keep record of non-compliance and remedial actions. These audits shall also be submitted to DFFE.

Upon final completion of the rehabilitation phase (post-construction), a final close-out report is to be prepared and submitted to DFFE. This report will be compiled in accordance with Appendix 7 of GNR 326 of the EIA Regulations.

4.7 Communication and Liaison with I&APs

The Developer and/or Contractor must ensure that the adjacent landowners are informed and updated throughout the construction phases. Sufficient signage should be erected around the site (including at the entrance), informing the public of the construction activities taking place. The sign boards should include the following information:

- The name of the Contractor;
- The name and contact details of the site representative to be contacted in the event of emergencies or complaint registration;
- Nature of activities on site;
- Adequate warning to passer-by of construction activities;
- No access for public;
- Hazards associated with the construction activities; and
- PPE to be worn.

A complaints register is to be kept as a record of all complaints received from the surrounding community, stakeholders and individuals. The register shall:

- Provide details of the complainant (name, surname and contact details);
- Record the time and date of the complaint;
- Contain a detailed description of the complaint;
- Where relevant and appropriate, contain photographic evidence of the complaint or damage; and
- Contain a copy of the Contractor's written response to each complaint received and keep a record of any further correspondence with the complainant.

4.8 Compliance Requirements, Penalties and Fines

The EMPr is a legally binding document as it forms part of the contract documentation. It is necessary for the Contractor to make provisions as part of their budgets for the implementation of the EMPr.

The following conditions will deem the Contractor to be in contravention of the EMPr requirements:

- If there is evidence of contravention of clauses within the boundaries of the site, site extensions and haul/access roads;
- If the environmental damage ensues due to negligence;
- If the Contractor fails to comply with corrective actions or other instructions issued by the PM or ECO within a specified time; and
- If the Contractor fails to respond adequately to complaints from the public.

Any avoidable non-compliance with the EMPr may result in the issuing of a contractual penalty.

4.9 Programme for Reporting on Compliance

All records will be kept for at least five (5) years.

The following aspects need to be monitored and audited:

- a) Compliance with EMPr, EA any other licenses' conditions
 - An ECO will be appointed to monitor compliance through monthly audits.
- b) Noise, Nuisance and Disturbance Monitoring
 - A record of complaints must be kept as well as the measures taken to address these complaints.
- c) OHSA Compliance
 - Register to indicate that all the employees and contractors have been informed as to their rights under the Act; and
 - Accident records as per the Act - reported to the Department of Trade and Industry (DTI) and the Department of Labour (DOL)

4.10 Environmental Awareness Plan

Training and awareness are essential for ensuring successful implementation of the EMPr. All personnel whose work may impact on the environment should receive appropriate training on the environmental procedures to be followed and need to be aware of the conditions and requirements of the EA and EMPr. Training may be undertaken in the form of Toolbox Talks and inductions for all new staff or visitors to the site.

Training should include the following:

- A description of significant environmental impacts, actual or potential, related to their work activities;
- Mitigation measures to be implemented when carrying out specific activities;
- Emergency preparedness and response procedures;
- Procedures to be followed when working near or within potentially sensitive areas;
- Water usage and conservation;
- Solid waste management procedures;
- Sanitation procedures;
- Dangers of open and/or unattended fires; and
- Any other topics which may be relevant to the EMPr or other legal requirements.

A record of all environmental awareness training courses undertaken as part of the EMPr must be kept on file and should include an attendance register of all staff that received environmental awareness training. Course material must be available and presented in all appropriate languages. Environmental awareness posters should also be displayed at areas on site where visibility is high – such as eating areas, offices and the site entrance.

5 IMPACT MANAGEMENT OUTCOMES AND ACTIONS

5.1 Activities causing potential impacts

The following activities could cause potential impacts if not managed properly or if no mitigation measure is implemented:

- Activities undertaken close to sensitive areas (Kgaswane Nature Reserve);
- Removal of vegetation;
- Establishment of the construction camp site / office;
- Batching/cement mixing activities;
- Access roads and movement of machinery/heavy vehicles/equipment on site;
- Creating conditions for alien invasive species to spread;
- Hydrocarbon spills / leakages;
- Poor waste management and littering;
- Dumping of material/waste;
- Stockpiling of soil and material;
- Poor management of water (storm water & potable water);
- Poor management of ablution facilities;
- Random events such as fire; and
- Poaching or removal of fauna/avifauna species.

5.2 Potential Impacts

5.2.1 Negative Impacts

- Loss of irreplaceable resources associated with the Critical Biodiversity Area (CBA2), hills and ridges, IBA, protected area buffer and important habitat for plants;
- Loss of Species of Conservation Concern (SCC);
- Destruction, fragmentation, transformation and degradation of habitats and ecosystems.
- Spread and/or establishment of alien and/or invasive species
- Fauna:
 - Displacement or reduced dispersal / migration due to habitat loss;
 - Disturbance / disruption / alteration of ecological life cycles (breeding, migration, feeding) due to noise, dust, vibration and light pollution;
 - Direct mortalities (poaching, road kills, hunting by domestic animals, insecticide use);
 - Direct interaction with humans (potential dangers); and
 - Introduction of pests and domestic animals.
- Erosion due to clearance of vegetation, compaction of soil or poor management of stockpiling areas;
- Pollution/contamination of soil, surface water and groundwater due to leakages or spillages of fuel, oil and hazardous substances;
- Pollution/contamination caused by littering or dumping of building waste (rubble);
- Unplanned events: fire, spills; and
- Chance finds of archaeological, cultural and heritage or palaeontological importance.

5.2.2 Positive impacts

- The property will be formally utilized and managed to prevent illegal access and activities.
- Safety and security will improve for existing and new developments.
- Sensitive areas, bordering Kgaswane Nature Reserve, and areas forming part of the MBR core will be formally protected (open space) and can be managed by the Home Owners Association (HOA).
- Alien Invasive Plant species can be controlled and managed especially in areas bordering Kgaswane Nature Reserve and MBR to protect these areas from deterioration.
- Employment opportunities associated with both the construction and operational phases.

- Addressing housing shortage in the area.
- Screening of and reducing the visibility of the Rustenburg Local Municipality (RLM) water reservoir which is an eye sore.

5.3 Management measures

Dedicated measures have been identified to manage the impacts identified above. The purpose of the EMP is to ensure that undue or reasonably avoidable adverse impacts of the project are prevented; that impacts which cannot be prevented are managed to reduce their significance; and that the positive benefits of the project are enhanced. The Applicant is responsible for the implementation of recommendations and mitigation/management measures and HydroScience cannot and will not take responsibility for their actions or lack thereof.

Table 5-1: Potential impacts and proposed management actions: Pre-Construction Phase

1. Authorisations, Permits, Licences and Appointments

Management Outcome: All necessary permits and licenses must be obtained prior to commencement of the activity to ensure legal compliance						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> The Environmental Authorisation (EA) must be issued prior to commencement of activities; An agreement needs to be signed stating that The Applicant knows and understands the contents of the EMPr and that it is able and shall comply with all legislation pertaining to the nature of the work to be done and incidental thereto; A detailed site development plan including the mitigation measures and recommendations provided in this EMPr (this document), must be submitted to DFFE for approval prior to commencement of construction activities; The EMPr must form part of the contractual agreement with the contractors and sub-contractors for the duration of the proposed project; Prior to commencement, the Applicant must appoint an independent ECO for the duration of the construction phase. The ECO must ensure that the mitigation/rehabilitation measures and recommendations are implemented and to ensure compliance with the provisions of the EMPr. DFFE and NW DEDECT must be informed of the ECO appointment and planned date of start of construction; Adequate financial provision must be made by the Contractor for the implementation of the EMPr. 	The Applicant	Contractual agreements to be signed. Site development plan to be approved by DFFE & RLM. Service agreements with RLM. Approval of building plans by RLM. The EMPr, to form part of the contract. A qualified ECO to be appointed. EA to be obtained prior to commencement.	Before commencement of activities	ECO	Once-off	All documents listed

2. Preparation of Method Statements

Management Outcome: Method statements for specific activities to be drawn up and approved prior to construction.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • As a minimum, the following Method Statements must be prepared by the Contractor prior to commencement and approved by the PM and ECO: <ul style="list-style-type: none"> - Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure; - Cement mixing/concrete batching/mixing; - Dust and noise management; - ERAP – Spills, training, other environmental emergencies; - Vegetation management – Protected, clearing, aliens, felling; - Erosion control; - Storage and handling of HCS; - Waste management –storage, segregation/seperation, classification, transport, disposal (all waste streams) - Sourcing of materials; - Chance finds procedure (archaeological, cultural and heritage or palaeontological) - Topsoil management - Stormwater management - Workshop or plant maintenance • The Method Statements must provide details on proposed mitigation measures to prevent pollution or degradation. • The ECO will monitor implementation of the Method Statements. 	Contractor	Method Statement	Before commencement of activities	ECO	Once-off (may require revision)	Audit report

Table 5-2: Potential impacts and proposed management actions: Construction Phase

1. Environmental Awareness Training

Management Outcome: All on-site staff are aware of and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • All staff must receive environmental awareness training; • All new staff coming onto site must receive environmental awareness training; • All staff must be made aware of the conditions and controls within the EMPr and other applicable authorisations / licenses / permits; • The responsible operator of vehicle / equipment / machinery must have the required training to make use of the spill kit in emergency situations; • All staff must be made aware of their individual roles and responsibilities in achieving compliance with the environmental authorisation and EMPr and other license conditions; • The Contractor must erect and maintain information posters at key locations on site; • Environmental awareness training should include the following: <ol style="list-style-type: none"> i. Description of significant environmental impacts, actual or potential, related to their work activities; ii. Mitigation measures to be implemented when carrying out specific activities; iii. Emergency preparedness and response procedures; iv. Procedures to be followed when working near or within potentially sensitive areas; v. Water usage and conservation; vi. Solid waste management procedures; vii. Sanitation procedures; viii. Dangers of open and/or unattended fires. 	Contractor	Presentations should be as visual as possible - it can include posters, power point presentations, videos or any other material that will assist in the training.	<p>Environmental awareness training must be done before construction starts and as soon as new staff members start on site and continue throughout the construction phase.</p> <p>Environmental posters must be on site at all times and must be visible / legible.</p>	ECO	During monthly inspection.	Photos Attendance Register Training material

<ul style="list-style-type: none"> • A record of all environmental awareness training courses undertaken as part of the EMPr must be available; • An attendance register of all staff that received environmental awareness training must be kept; • Course material must be available and presented in all appropriate languages; • Environmental training and topics can form part of the daily Toolbox Talks. 						
--	--	--	--	--	--	--

2. Site Establishment

Management Outcome: Impacts on the environment are minimised when establishing new infrastructure and the development footprints are kept to a minimum and within demarcated site establishment area.

Potential Impacts:

- Loss of vegetation and faunal habitat
- Activities may lead to displeasing aesthetics, such as the storage of materials, excavation activities and the use and storage of machines / vehicles / equipment
- Pollution of soil, runoff and groundwater due to spills on site

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • A Site Establishment Method Statement must be provided by the contractor prior to any on-site activity that includes: <ul style="list-style-type: none"> ○ overnight vehicle / machinery parking areas; ○ stockpile and lay down areas; ○ the batching area / plant; ○ equipment cleaning areas; ○ eating and ablution facilities; ○ waste management areas; ○ access routes; ○ sensitive areas/no-go zones. • Location of the site camp must be within an approved area to ensure that the site does not impact on the identified sensitive areas; • Sites should be located where possible on previously disturbed areas; • If possible, existing buildings should be used as offices; • No staff to be accommodated overnight on the property; • Signs (safety) must be erected at the entrance to the working site; • All storage areas should be marked as "Laydown" areas, should be barricaded and kept neat and tidy at all times; • Housekeeping should be done daily. 	Contractor	Area can be identified during a site visit.	Before site establishment and throughout construction phase.	ECO	Before site establishment and during all site visits	Photos Audit report

3. Access Roads

Management Outcome: Minimise impact to the environment through the planned and restricted movement of vehicles to/on site.						
Potential Impacts:						
<ul style="list-style-type: none"> • Loss of habitat through the damage of vegetation • Loss of biodiversity through the damage of vegetation or killing of fauna • Compaction of soil • Erosion 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • During site planning, all access roads must be identified and assessed to ensure that the best route is chosen; • Access to the site must fall within the assessed area; • Areas adjacent to the Kgaswane Nature Reserve should be avoided as far as possible; • Maximum use of existing roads must be made. 	Project Manager Project Engineer Contractor	Site walk-about before site establishment.	During planning and site establishment and construction.	ECO	During all site visits	Photos

4. Fencing where required / applicable

Management Outcome: To minimise impact to the environment and ensure safe and controlled access to the site through the erection of a fence and gates where required.						
Potential Impacts:						
<ul style="list-style-type: none"> • Loss of habitat through the damage of vegetation • Loss of biodiversity through the damage of vegetation or killing of avifauna • Compaction of soil • Erosion • Security breaches 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Use existing gates where possible to gain access to all parts of the site (two existing contractor gates from Krokodilrivier and Visrivier already exist for Cashan X7 and can be used for this development); • All gates must be fitted with locks and be kept locked after working hours (already done and manned by security during the day / working hours); • All demarcation fencing and barriers must be maintained in good working order for the duration of the site establishment period; • It is recommended that areas to be developed be specifically demarcated so that during the construction phase, only the demarcated areas be impacted upon (including fencing off the defined project area); • On completion of the project, all temporary fences are to be removed and where possible re-used by the contractor at new project sites; • The contractor will ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely; 	Contractor	Construction of a fence – a fence already exists (this clear view fence replaced the fence erected by Kgaswane Nature Reserve which was old, rusted and damaged.	Before site establishment	ECO	During all site visits	Photos

5. Water Management

Management Outcome: Undertake responsible water usage and prevent pollution of water.						
Potential Impacts:						
<ul style="list-style-type: none"> • Pollution of groundwater (through seepage and filtration) • Pollution of surface water (through accumulation and run-off) 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • All reasonable measures to limit pollution or sedimentation of water, with specific focus on runoff from site. • Ensure water conservation and responsible use by: <ul style="list-style-type: none"> - Sourcing construction water from responsible and legal sources; - Minimising water use during cleaning of equipment; - Undertaking regular audits of water systems; - Discussing water usage and conservation during environmental awareness training and toolbox talks. 	Contractor	Storm Water Management Plan (SWMP)	Before and during construction and operation	ECO	During all site visits	Photos

6. Sensitive Environments

Management Outcome: The MBR core areas and area bordering the Kgaswane Nature Reserve are considered environmentally sensitive features and should be avoided.						
Potential impacts:						
<ul style="list-style-type: none"> • Pollution of groundwater • Pollution of surface water (through accumulation and run-off) • Habitat fragmentation and loss 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Areas rated as High sensitivity outside of the direct project housing development areas should be declared as 'no-go' areas during the life of the project, and all efforts must be made to prevent access to these areas from construction workers and machinery. • These areas must be clearly indicated on the site layout plan (green) and must be managed as conservation areas/greenbelts. • Clearing of the very low to moderate sensitivity areas is permitted, taking stand density into consideration. Thereafter, these areas identified for inclusion in the conservation area must be managed as no-go areas. • All reasonable measures to prevent pollution to water sources should be implemented. • Remain within demarcated areas. Ensure that the core areas are cordoned off as no-go zones. • Discuss sensitive environments during environmental awareness training and toolbox talks. • A security patrol paved path already exists along the boundary fence. Other already cleared paths may be paved as well. 	Contractor	Site layout plan, demarcation, awareness training	During construction	ECO	During all site visits	Photos

7. Storm and Waste Water Management

Management Outcome: An effective system of storm water run-off control is implemented, where required and impacts to the environment caused by storm water and wastewater discharges during activities are avoided.						
Potential Impacts:						
<ul style="list-style-type: none"> • Pollution of storm water • Pollution of soil • Erosion and siltation 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Construction should preferably take place in the dry season (winter) as natural runoff is minimal then; • Additional storm water concentration must be contained (attenuated) before discharge. • Appropriate pollution control necessary to prevent discharge of water containing polluting matter or visible suspended solids (litter, hydrocarbon & silt traps); • Run-off from the batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location legally approved to accept the wastewater (keep safe disposal certificate); • All spillages of hydrocarbons onto surfaces must be cleaned by the use of an approved absorbent material and the used absorbent material disposed of at an appropriately licensed waste disposal facility (keep safe disposal certificate); • Any stockpiled soil and rock should have storm water management measures implemented around it; • The large roof structures to be built and sealed (concrete / tar / brick) surfaces will increase storm water volumes that need to be managed; • A SWMP must be available and used during all the phases of construction (as well as operation); 	Contractor	SWMP	Measures implemented before site establishment starts and checked during construction phase	ECO	During all site visits	Photos

<ul style="list-style-type: none">Storm Water run-off & Discharge Water quality need to be monitored for quality and erosion.						
---	--	--	--	--	--	--

8. Solid Waste Management

Management Outcome: Wastes are appropriately stored, handled and safely disposed of at a licensed waste disposal facility.						
Potential Impacts:						
<ul style="list-style-type: none"> • Loss of habitat through the damage of vegetation • Compaction of soil • Pollution of soil due to spillages associated with dumping of solid waste • Establishment of Alien Invasive Plant Species • Pests and odours • Aesthetics 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<u>General:</u> <ul style="list-style-type: none"> • All measures regarding waste management must be undertaken using an integrated waste management approach; and • A suitable position away from the identified sensitive areas must be found and clearly demarcated for waste collection and storage. • Waste areas to be screened where possible. <u>Prevention of waste:</u> <ul style="list-style-type: none"> • Material storage areas should be safe, secure and weather-proof to prevent damage to material (resulting in waste generation) and theft. Area with impermeable base and cover / roof or in sealed containers. • Due to the additional movement of people, there will be increased litter production and higher probability of littering. Therefore, there should be on-site signs raising the awareness of the impacts of littering on the natural environment and weekly litter patrols to collect litter. • Train staff/contractors to operate in an environmentally responsible manner (closing of taps for water conservation, reporting spills, no littering etc.). 	Contractor		Measures must be implemented before site establishment starts and must be controlled during construction.	ECO	During all site visits	Photos Safe disposal certificates

<ul style="list-style-type: none"> No planned maintenance or servicing of vehicles / machinery / equipment on site. If emergency maintenance is required to on-site vehicles, machinery and/or equipment, drip trays and / or absorbent mats will be placed underneath the vehicles / machinery / equipment where maintenance work is conducted to prevent grease/oil spillages impacting the environment or generating waste (contaminated soil). <p><u>Reduction / minimisation of waste:</u></p> <ul style="list-style-type: none"> Reduce waste quantities and disposal costs through a reduction in the materials ordered. “Take-back” schemes – setting up schemes with suppliers to take back surplus materials. Engage with the supply chain to supply products and materials that use minimal packaging. <p><u>Reuse / recycling of waste:</u></p> <ul style="list-style-type: none"> Separate / sort / segregate waste for collection and recycling - make arrangements with recycling contractors to provide clearly marked bins for material separation / sorting. Make sure that contractors are aware of the placement of the bins and their responsibility to separate / sort materials. Though no special disposal methods are required for non-hazardous waste, non-biodegradable refuse such as glass bottles, plastic bags, etc., must be stored in suitable containers to allow for recycling and emptied on an as-required basis for recycling purposes during the working phase. Segregate packaging for reuse. <p><u>Waste handling on site:</u></p> <ul style="list-style-type: none"> Separate / segregate / sort waste into different containers. Collect waste in suitable containers (drums / skips / bins on site). Waste containers should be marked, or colour coded to indicate which types of waste can be disposed to it. Staff to be trained in this regard to segregate waste. Ensure sufficient containers are available for storage of waste prior to removal off site to prevent overflow and littering on the site and surroundings. 						
---	--	--	--	--	--	--

<ul style="list-style-type: none"> • Ensure no litter, refuse, waste and rubble generated on the premises will be placed, dumped or deposited on this site, adjacent or surrounding properties during the working phase. • The waste collection and storage site must be maintained in a clean and orderly fashion. • Waste must be disposed, as soon as possible to a municipal transfer station, skip or on a licensed landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours and attracting pests. Empty containers regularly and waste should not be stored on site in excess of 30 days. • Waste collection bins with secure covers (scavenger and weatherproof) must be provided to prevent fauna entering the container. Waste containers must not to be left standing without a cover as this may attract fauna to inspect the skip and possibly cause death or injury to the fauna. • Waste may not be burnt or buried on site. • Hazardous waste must be stored separately from general waste on an impermeable surface within a bund wall and disposed of at a licensed hazardous waste site if not recycled. <p><u>Waste removal & disposal:</u></p> <ul style="list-style-type: none"> • Companies that transport the waste must be registered / licenced to do so. • Site must be easily accessible for trucks picking up or dropping off the skips. • Remove waste from site for recycling or disposal to the local licensed municipal landfill / waste management facility on a regular basis (at least weekly or when container is full). • No burning or burying of waste. • Any hazardous waste will be stored and handled according to the relevant legislation and only disposed to licensed disposal facilities. <p><u>Documentation:</u></p> <ul style="list-style-type: none"> • Report on the quantities of different waste streams managed (landfill, reuse, recycling, energy recovery). 						
---	--	--	--	--	--	--

<ul style="list-style-type: none"> • Ensure copies of all waste manifests (safe disposal certificates) are kept, showing responsible handling, transport and disposal by a reputable waste handler. • Include measures in contract that will ensure contractors are required to clean their work area after construction. 						
---	--	--	--	--	--	--

9. Vegetation Management

Management Outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed project and must be done in phases according to the development phases.

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Loss in biodiversity and SCC
- Compaction of soil
- Establishment of Alien Invasive Plant Species
- Loss in aesthetic value of property

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • The appointed ECO must be on site when construction begins. • A site walk through is recommended by a suitably qualified ecologist prior to any construction activities, preferably during the wet season and any SCC should be noted. • Where threatened and protected plants must be removed, the Applicant may only do so after the required permission/permits have been obtained in accordance with national and provincial legislation. In addition to this, a search, rescue and recovery program should be developed for the protection of these species. • <i>Boophone disticha</i> and <i>Aloe sp</i> found within the development area need to be relocated prior to construction to a nursery (or designated area) on site and used for landscaping during rehabilitation. • During vegetation clearance, methods should be employed to minimize potential harm to fauna species. Clearing has to take place in a phased and slow manner, to maximize potential and time for any mobile species to move to adjacent areas; • Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. All 	Contractor and ECO	Site survey or walkabout	Measures implemented before site establishment starts and monitored during construction and post-construction phase	ECO	During all site visits	Photos

<p>construction/operational access must make use of the existing roads.</p> <ul style="list-style-type: none"> • All vegetation removed during the site establishment period must be disposed of at a registered “green” landfill site or composting site or in an appropriate manner as agreed by the ECO unless it is indigenous vegetation which could be used during rehabilitation. • If herbicides / pesticides are used, only a registered control operator must carry this out or it must be carried out under the supervision of a registered control operator, or someone who is appropriately trained and a daily register must be kept of any usage. • Trees, shrubs, grass, natural features and topsoil which are not removed during vegetation clearance shall be protected from damage during construction and be incorporated into the development where possible. • When removing trees, maintain indigenous trees that will not hamper development. • Protected tree species need either a permit to be destroyed or can be relocated within the area and later used for landscaping by a qualified person. Avoiding the trees is the preferred option. • Removal and disposal of alien invasive plant species must be done in an appropriate manner as required by law - Alien Invasive Species Regulations 2020 (NEMBA Act 10 of 2004). • Obtain permit for the removal of protected species such as <i>Berchemia zeyheri</i>, Marula and Cheesewood 						
--	--	--	--	--	--	--

10. Protection of Fauna

Management Outcome: Minimise the disturbance to fauna and avifauna, particularly associated with sensitive areas.						
Potential Impacts:						
<ul style="list-style-type: none"> • Loss of habitat through the clearing of vegetation • Loss in biodiversity due to catching and killing • Loss of SCC • Establishment of Alien Invasive Plant Species 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Should animals not move out of the area on their own, relevant specialists must be contacted to advise on how the species can be relocated. • Should any SCCs be identified or found during construction, this should be immediately reported to the EO and ECO to take further action. • The reserve and open areas must be fenced off appropriately pre-construction in order to allow animals to move or be moved into these areas before commencement. • Construction activities must take place systemically starting in the eastern corner of the project area and moving to the west. • No poaching must be tolerated under any circumstances. • No trapping or poisoning or killing of animals. • No feeding of animals on site or the adjacent properties. • Any noisy point-sources utilised on site should be enclosed, and all equipment / machinery fitted with silencers where applicable. • All equipment / machinery will be serviced and maintained within operating specifications to prevent excessive noise. • Facility lighting during construction & operation should be kept to a minimum and should make use of the latest technology to ensure that light disturbance is minimised. This will also reduce 	Contractor	Site survey or walkabout	Before site establishment and during activities	ECO	During all site visits	Photos Record of site survey/ walkabout

<p>the attraction of insects (and in turn insectivorous birds) to the facility.</p> <ul style="list-style-type: none"> • Outside lighting should be designed to minimize impacts on fauna. All outside lighting should be directed away from sensitive areas. Fluorescent and mercury vapour lighting should be avoided, and sodium vapour (green/red) lights should be used wherever possible. 						
--	--	--	--	--	--	--

11. Aesthetics

Management Outcome: Minimise the detrimental impacts on the visual/scenic quality of the area and retain sense of place.						
Potential Impacts:						
<ul style="list-style-type: none"> Loss of or alteration to key elements / features /characteristics of the baseline aesthetics Low scenic quality 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> The minimum amount of existing vegetation and topsoil should be removed. Good housekeeping and dust suppression will be required. Waste management is essential and if not done properly, can contribute to an untidy and aesthetically displeasing construction site. Earthworks should be executed in such a way that only the footprint and a small 'construction buffer zone' around the proposed activities is exposed. In all other areas, the natural occurring vegetation, more importantly the indigenous vegetation should be retained especially along the periphery of the site. Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site. Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry (motion detection) to the site. Minimise the number of light fixtures to the bare minimum, including security lighting. Where possible, shade netting should be used to temporarily screen areas which may be visible and unsightly to neighbours, such as laydown or storage areas, toilets and eating areas. The most prominent views to the project site would be from the residential areas that surround the project site, this would 	Contractor	Site survey or walkabout	Before site establishment and during activities	ECO	During all site visits	Photos Record of site survey/ walkabout

<p>include the existing Schoongezigt Residential Estate, Rockridge (north of the site) and Cashan 33 (west of the site).</p> <ul style="list-style-type: none"> • The applicant will also look into option for screening the visibility of the unsightly RLM water reservoir. • Views from Kgaswane Nature Reserve will only be from a distance. 						
--	--	--	--	--	--	--

12. Protection of Heritage Resources

Management Outcome: Minimise the disturbance to heritage resources.						
Potential Impacts:						
<ul style="list-style-type: none"> Loss of heritage resources Damage to heritage resources 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> A method statement should be compiled to provide the process to be followed during a chance find. All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported as per the information below or to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Reporting of the findings must be done as follows: <u>Archaeological sites or remains, fossils or other categories of heritage resources</u> - SAHRA APM Unit (Natasha Higgitt / Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. <u>Unmarked human burials</u> - SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase / Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA. 	Contractor	Surveys during excavations etc.	During construction activities	ECO	During all site visits	Photos

- | | | | | | | |
|--|--|--|--|--|--|--|
| <ul style="list-style-type: none">• Sufficient time should be allowed to remove/collect such material before work recommences. | | | | | | |
|--|--|--|--|--|--|--|

13. Safety of the Public

Management Outcome: All precautions are taken where possible to minimise the risk of injury, harm or complaints.						
Potential Impacts:						
<ul style="list-style-type: none"> • Damage to property • Injuries • Vehicle accidents • Traffic congestions becoming a nuisance 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Demarcate and restrict public access to the working areas (fencing, locked gates, access control through security guards etc); • Ensure that there is signage all over the site that warns the public of construction activities and associated dangers/risks; • Ensure that there are sufficient road signs so that the public is aware of heavy /slow moving vehicles moving around; • Points men/women must be appointed to direct traffic or warn motorist of any danger on the public roads; • All unattended open excavations must be adequately fenced or demarcated with chevron tape; • Adequate protective measures must be implemented to prevent unauthorised access to areas and climbing of structures; • Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged. 	Contractor	Signage and traffic control measures	Proper planning must be done before establishment and implemented during construction and operational activities	ECO	During all site visits	Incident reports Complaints register Photos

14. Sanitation

Management Outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.						
Potential Impacts:						
<ul style="list-style-type: none"> • Risk of diseases • Sewage spillages could occur • Odours 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Keep all ablution facilities clean; • If temporary toilets cannot be tied into municipal sewers, mobile dry chemical toilets can be installed on site for construction (1 per 15 workers); • Ablution facilities and / or mobile dry chemical toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; • Proper hand washing facilities, including soap, must be provided for the ablution facilities and the chemical toilets; • Where mobile dry chemical toilets are required, the following must be ensured: <ul style="list-style-type: none"> ○ Toilets must not be located close to any storm water runoff channels or sensitive area; ○ Toilets are secured to the ground to prevent them from blowing over; ○ No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr requirements for waste disposal; ○ Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; ○ Toilets are serviced regularly and the EO or safety officer must inspect toilets to ensure compliance to health standards; ○ A copy of the safe waste disposal certificates must be kept. 	Contractor	Records of disposal certificates.	Portable dry chemical toilets must be provided before site establishment starts and removed once rehabilitation is completed.	ECO	During all site visits	Photos Documents Certificates of removal and safe disposal of sewage

15. Emergency Procedures

Management Outcome: Emergency procedures are in place to enable a rapid and effective response to all types of emergencies.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Compile an Emergency Response & Action Plan (ERAP) prior to the commencement of the project (see Section 4.4); • The ERAP must deal with accidents, potential spillages and fires in line with relevant legislation; • All staff must be made aware of emergency procedures as part of environmental awareness training; • The RLM's fire department must be made aware of a fire as soon as it starts; • In the event of emergency mitigation measures being necessary to contain the spill or leak, it must be implemented as per the section below - Hazardous Substances. 	Contractor	Notice boards. Toolbox talks to include it as a topic. List of emergency numbers	Must be done before site establishment starts and implemented during construction activities.	ECO	During all site visits	Photos Documentation Incident reports

16. Hazardous Substances

Management Outcome: Safe storage, handling, use and disposal of hazardous substances.						
Potential Impacts:						
<ul style="list-style-type: none"> Contamination of soil, groundwater or storm water due to leaks/ spills 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> The storage and use of hazardous substances to be minimised and substituted with non-hazardous and non-toxic alternatives where possible; All hazardous substances will be stored in suitable containers as defined in the legislation and Material Safety Data Sheet; Containers will be clearly marked to indicate contents, quantities and safety requirements; All storage areas will be bunded. The bunded area will be of sufficient capacity to contain a spill / leak from the stored containers (110% of container capacity); An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis; All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS); All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet; Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment (PPE) must be made available; The Contractor must ensure that hydrocarbons are stored in appropriate storage tanks or in bowsers; The tanks / bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity 	Contractor	Training and awareness. Inspections	Planning done prior to site establishment and implemented during construction activities.	ECO	During all site visits	Photos

<p>of all the storage tanks / bowsers (110% statutory requirement plus an allowance for rainfall);</p> <ul style="list-style-type: none"> • The floor of the bund must be sloped, draining to a separator; • Re-fuelling should be done off site; • If on-site, provision must be made for re-fuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; • All empty dirty drums must be stored on a drip tray or within a banded area; • No unauthorised access into the hazardous substances' storage areas shall be permitted; • No smoking must be allowed within the vicinity of the hazardous storage areas; • Adequate fire-fighting equipment must be made available at all hazardous storage areas; • An appropriately sized spill kit kept on-site relevant to the scale of the activity involving the use of a hazardous substance must be available at all times; • The responsible operator must have the required training to make use of the spill kit in emergency situations; • In the event of a spill, contaminated soil must be collected in containers and stored in a central location according to the Norms and Standards for Waste Storage (GNR 926 of 29 November 2013) and disposed of according to the National Environmental Management: Waste Act (Act 59 of 2008). 						
--	--	--	--	--	--	--

17. Batching Area

Management Outcome: To control concrete and cement batching activities in order to minimise spillages and contamination of soil, surface water and groundwater.						
Potential Impacts:						
<ul style="list-style-type: none"> Contamination / pollution of water or soils 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> Batching activities must not take place near sensitive areas and the site layout plan should be planned accordingly; Concrete mixing must be carried out on an impermeable surface (such as boards and/or within a bunded area with an impermeable surface or wheelbarrow, if batches are small) or make a hard surface and remove when done; Bagged cement must be stored in an appropriate facility and at least 10 m away from any runoff channel, gullies and drains and at least 100m away from sensitive areas; A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; Hardened concrete from the washout facility can either be reused or disposed of at an appropriate licenced disposal facility; Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; Sand and aggregates containing cement must be kept damp to prevent the generation of dust; Any excess sand, stone and cement must be removed or reused from site on completion of activities period and disposed at a registered disposal facility; Preferably use ready mix. 	Contractor	Allocated batching / mixing area with sealed surface.	Before commencement. During construction activities.	ECO	During all site visits	Photos

18. Dust & Emissions

Management Outcome: Dust prevention measures are applied to minimise the generation of dust.						
Potential Impacts:						
<ul style="list-style-type: none"> Nuisance for residents or people at work Health risk 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> Take all reasonable measures to minimise the generation of dust; Removal of vegetation must be limited to the working area / footprint; During high wind conditions, the EO / ECO will evaluate the situation and make recommendations as to whether dust-dampening measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g. dampening with water; particularly during prolonged periods of dry weather. Such measures must also include the use of temporary stabilising measures (e.g., chemical soil binders, straw, brush packs, chipping); Dampening with water should, however, not result in pooling or runoff due to excessive use of water; Maintenance on construction vehicles / machinery / equipment must be done to avoid the release of excessive emissions; All vehicles and machinery / equipment used on, or entering the site, must be maintained and serviced regularly to ensure that they do not emit smoke or fumes; The contractor's representative must ensure that all on-site vehicles comply with the old SABS 0181 standards (now SANS 10181:2003 in conjunction with SANS 10282:2003); 	Contractor	Dust suppression	During construction activities.	ECO	During all site visits	Photos Complaints register

<ul style="list-style-type: none"> • Limit idling time of vehicles / equipment; • Avoid overloading of construction vehicles; • Use of plastic to cover stockpiles and tarpaulins for vehicles should be considered; • Any solvent-based finishes such as paints, varnishes, sealants, and polishes will contain minimal levels of Volatile Organic Compounds (VOC) and no Chloro-Fluoro Carbons (CFC), which may harm the atmosphere. Water-based paints are to be used where possible and plant-based stains and sealants must be considered as these are more environmentally friendly; • Dust masks to be worn by workers where necessary. 						
---	--	--	--	--	--	--

19. Noise

Management Outcome: To prevent unnecessary noise to the environment and surrounding community by ensuring that noise from activities is mitigated.						
Potential Impacts:						
<ul style="list-style-type: none"> Nuisance for residents or people at work Health risk 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> Construction hours must be adhered to, weekdays from 08:00 – 17:00. If possible, construction activities must be limited to the week and should activities take place over a weekend, the I&APs and landowners must be consulted with and be informed. The contractor is to abide by the by-laws of the local municipality relating to noise control. Ear plugs are to be worn by construction workers as and when required. Reducing the noise produced through silencers, lubrication and maintenance, vibration damping i.e. placing a layer of damping material (rubber, neoprene, cork or plastic) beneath the vibrating machine. Reduce noise from vehicles by: <ul style="list-style-type: none"> turning off engines when they are not in use; checking the brakes are properly adjusted and don't squeal; no revving the engine unnecessarily; only using the horn in emergencies; and replacing exhaust systems as soon as they become noisy. 	Contractor		During construction activities.	ECO	During all site visits	Photos Documents Emails Complaints register

20. Fire prevention

Management Outcome: Prevention of uncontrollable fires.						
Potential Impacts:						
<ul style="list-style-type: none"> • Possible injuries • Air pollution due to smoke • Smoke can be a health risk • Loss of habitat • Damage to property • Spread of fire to Kgaswane Nature Reserve and associated damage 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Designated smoking areas must be allocated; • Bins must be provided for cigarette buds at the designated smoking area; • Firefighting equipment must be available on all vehicles located on site; • The local Fire Department must be informed of activities; • Contact numbers for the Fire Department and emergency services must be communicated in environmental awareness training, toolbox talks and displayed at a central location on site. 	Contractor	Fire-fighting equipment	During operational activities.	ECO	During all site visits	Photos

21. Stockpiles and Stockpiling Areas

Management Outcome: To reduce erosion and sedimentation as a result of stockpiling.						
Potential Impacts:						
<ul style="list-style-type: none"> Soil erosion and siltation 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> All material that is excavated during the activities (during earthworks) must be stored appropriately on site; Topsoil must be kept separate from subsoil layers, and conserved appropriately for use during rehabilitation; All stockpiled material must be maintained and kept clear of weeds and alien invasive species by undertaking regular weeding and control methods; Stockpiles must not exceed 2 m in height; During periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g., cloth, tarpaulin etc.); Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material in order to prevent erosion and washing away of the material. 	Contractor		During construction activities.	ECO	During all site visits	Photos

22. Landscaping and Rehabilitation/ Remediation

Management Outcome: No environmental degradation occurs as a result of the project.						
Potential Impacts:						
<ul style="list-style-type: none"> • Soil erosion • Infestation of weeds and AIPs 						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • All spoil and waste will be disposed to a licensed waste site and certificates of safe disposal provided; • Stockpiled topsoil must be used for rehabilitation; • Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; • Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; • Subsoil must be ripped before topsoil is placed; • Sections that will not be paved or that could rather be landscaped should be landscaped according to a landscape plan or planting plan; • Trees that were left on site must be maintained and included as part of the landscape plan; • If possible, the project must be timed so that rehabilitation/ landscaping can take place at the optimal time for vegetation establishment; • After site rehabilitation / landscaping, the sites must be monitored in order to ensure that rehabilitation is successful. During the monitoring period all AIPs must be eradicated according to the Method Statement. Reseeding may be required where rehabilitation has not been successful. 	Contractor	Seeding and planting according to landscaping plan	After construction or if possible, during the last phases of construction.	ECO	During all site visits	Photos Alien invasive eradication programme

23. Communication

Management Outcome: Proper communication with landowners, neighbours and the public to keep them informed.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> Notify DFFE and NW DEDECT 14 days before construction commences. Notify landowners, neighbours and councillors at least 7 days before activities start of the intention to commence with the construction of the development. This should be done as the project progresses from one area/neighbourhood to the following. Keep a complaints register on site. A notice board should be visible with the contact information of the Project Manager, Contractor, Emergency Contact and ECO. In addition to the contact information, there should also be a timeframe of when work will commence and when it will be completed. A project schedule should be drawn up, updated regularly and available at all times. 	Project Manager/ Contractor	Telephone calls Emails Notifications / Posters	Before construction starts and during construction.	ECO	During all site visits	Photos Emails Signed register Complaints register

Table 5-3: Potential impacts and proposed management actions: Operational Phase

1. Rehabilitation

Management Outcome: No surrounding environmental degradation occurs as a result of the project.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> Rehabilitation of the existing disturbed areas in the project area (due to reservoir construction) must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with indigenous plant species naturally occurring within the area. <i>Boophone disticha</i> and <i>Aloe sp</i> that were relocated to a nursery (or designated area) on site must be replanted and incorporated into the landscaping. Progressive rehabilitation of construction areas or cleared areas will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank. These areas must be clearly demarcated and suitably protected from dust precipitation to prevent degradation. Areas with compacted soils should be rehabilitated, stripped or ripped to break the compacted soil surface to approximate natural slope of the proposed development area to allow revegetation and erosion control. Storm water outlets should be designed and constructed so that no concentration of flow takes place from the development. Any remaining maintenance materials, building rubble and waste must be removed from the site. Appropriate indigenous vegetation should be used for the rehabilitation and re-vegetation within the disturbed areas (refer to The Biodiversity Company recommendations). 	Contractor	Rehabilitation plan implemented. Compacted areas ripped and prepared for seeding. Left over materials and waste removed from site. Relocating/planting indigenous vegetation.	Immediately after construction is complete.	ECO	Immediately after construction is complete.	Photos Close-out audit

2. Monitoring and Maintenance

Management Outcome: Continued commitment to prevent pollution or degradation while ensuring that mitigation measures were successfully implemented.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> • Conditions must be monitored after completion to ensure that <ul style="list-style-type: none"> ○ erosion is not taking place; ○ rehabilitation is successful; and ○ stormwater management measures are effective. • A maintenance method statement should be developed prior to maintenance works being undertaken; • Edge effects, such as erosion and alien plant species proliferation, which may affect adjacent natural areas, need to be strictly managed in accordance with the requirements of the NEMBA Alien and Invasive Species Regulations (2020); • Ongoing AIP monitoring and control should take place throughout the operational phase, and the project perimeters should be regularly checked for AIP establishment to prevent spread into surrounding natural areas; • Alien vegetation removed must not remain on unprotected ground as seeds might disperse upon it. All cleared plant material to be disposed of at a licensed waste facility; • Water monitoring to be conducted as per the EA and Water Use License. 	The Applicant	Per actions	Post construction	ECO	Prior to final audit	Audit report Monitoring results

3. Aesthetics

Management Outcome: The development does not detrimentally affect the visual quality of the residents surrounding the development and tourist and visitors viewing the development from the Kgaswane Nature Reserve.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> The Schoongezigt Estate Architectural Design & Building Guidelines must be consulted prior to commencing with the design of any property improvements or building proposals. As the estate is surrounded by parklands and nature, the design of each home must consider its immediate surroundings as well as the greater environment and should be as sustainable and eco-friendly as possible. The design of the dwellings and the entire stands must show sensitivity to the existing natural features, flora, and topography. Residents will need to comply with the Schoongezigt Estate Community Living Rules & Regulations which have been structured to ensure safe, quality harmonious living. 	Residents	Per actions	Operational	Schoongezigt Homeowners Association	As required	Inspection

6 CONCLUSIONS & RECOMMENDATIONS

Although all foreseeable actions and mitigation measures or management actions have been recorded in this document, the EMPr should be seen as a live management document. If continuously reviewed and managed correctly, the EMPr will be an effective management tool in ensuring the successful construction and operation of the development.

The EMPr must inform contractual documentation to ensure that contractors are aware of the potential cost and timing implications for the implementation of the EMPr, thus adequately providing for them. Further guidance should also be taken on any conditions contained in the EA (once issued) and that these conditions form part of and are an extension of the EMPr requirements.

The EMPr must also consider the conditions of any future Water Use Authorisation issued by DWS.