Eco Route
ENVIRONMENTAL CONSULTANCY
REGISTRATION NO. 1998/031976/23

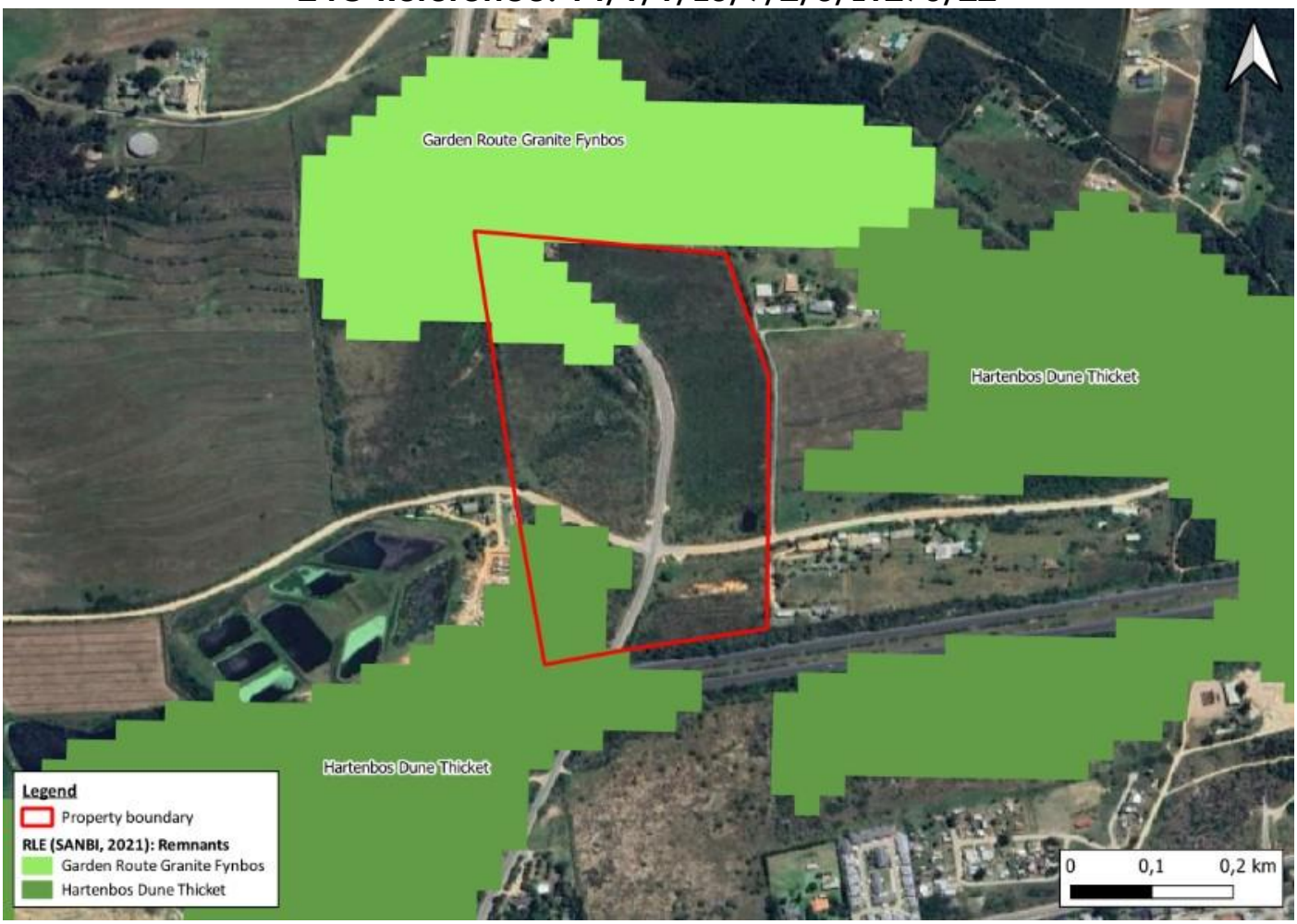
DR. COLLEEN EBERSOHN
PhD Univ. Pretoria
Cell:072 222 6013
e-mail: colleen@ecoroute.co.za

MS. JANET EBERSOHN
Bsc. Hons.Environmental Management
Cell: 082 557 7122
Tell: 044 343 2232
e-mail:janet@ecoroute.co.za

Appendix I – DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT (Draft EMPr)

In terms of the **National Environmental Management Act** (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations (as amended, 2017) for:

Proposed mixed use / light industrial development on RE/ 139 Farm Zandhoogte, Mossel Bay Municipality, WESTERN CAPE
24G Reference: 14/1/1/E3/9/2/3/L1270/22



PREPARED FOR THE APPLICANT:	Sapphire Ocean Investments (RF) (Pty) Ltd - Mr Erno Janse van Rensburg EMAIL: Ernoj@alsgroup.co.za
AUTHOR:	CLAIRE DE JONGH (EAPASA REG: 2021/3519)
DATE:	**August 2025**

ENVIRONMENTAL MANAGEMENT PROGRAMME REQUIREMENTS:

Appendix 4 of Regulation 982 of the 2014 EIA Regulations (as amended, 2017) published in terms of the NEMA, contains the required contents of an Environmental Management Programme (EMP). The table below serves as a summary of how these requirements were incorporated into this EMPR:

An EMPr must comply with section 24N of the Act and include:-

(a) Details of – (i) The EAP who prepared the EMPr; and (ii) The expertise of the EAP to prepare an EMPr, including a curriculum Vitae;	This EMPr was prepared by Claire De Jongh. of Eco Route. Please see attached CV of the EAP (Annexure 3).
(b) A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME
(c) a map at an appropriate scale which superimposes the proposed activity, it associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Annexure 1
(d) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including – (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	S24G application form – Section F and Section G
(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practises; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME Section 7 - COMPLIANCE WITH THE EMPr
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME Section 7 - COMPLIANCE WITH THE EMPr
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 6 of draft EMPr
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME Section 7 - COMPLIANCE WITH THE EMPr

(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 7 - COMPLIANCE WITH THE EMPr
(l) a program for reporting on compliance, taking into account the requirements as prescribed by Regulations;	Section 4 - REPORTING PROCEDURES Section 7 - COMPLIANCE WITH THE EMPr
(m) an environmental awareness plan describing the manner in which – (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 7 - COMPLIANCE WITH THE EMPr Section 10. - DRAFT STAFF / TENANT CONDUCT CONTROL AND INFORMATION SHEET
(n) any specific information that may be required by the competent authority.	Draft EMPr S24G application form

Glossary of Terms

AIS	**Alien Invasive Species**
BOGMA	**Breede-Olifants Catchment Management Agency -** Catchment Management Agency established to manage water resources in the Breede-Olifants region. BOGMA operates under the oversight and regulatory role of the DWS.
CBA	**CBA Critical Biodiversity Area** – Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
DFFE	**Department Forestry Fisheries and Environment**– the national authority for sustainable environmental management and integrated development planning.
DEADP	**Department of Environmental Affairs and Development Planning** – the provincial authority for sustainable environmental management and integrated development planning.
DWS	**Department of Water and sanitation** – responsible for issuing of Water Use License
EAP	**Environmental Assessment Practitioner –** An EAP and a specialist, appointed in terms of regulation 12(1) or 12(2) must – (a) be independent. (b) Have expertise in conducting environmental impact assessments or undertaking specialist work as required, including knowledge of the Act, these regulations and any guidelines that have relevance to the proposed activity. (c) Ensure compliance with these Regulations (d) Perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the application. (e) Take into account, to the extent possible, the matters referred to in regulation 18 when preparing the application and any report, plan or document relating to the application; and (f) Disclose to the proponent or applicant, registered and affected parties and the competent authority all material information in the possession of the EAP and, where applicable, the specialist, that reasonably has or may have the potential of influencing – i. Any decision to be taken with respect to the application by the competent authority in terms of these regulations; or ii. The objectivity of any report, plan or document to be prepared by the EAP or specialist, in terms of these Regulations for submission to the competent authority; unless access to that information is protected by law, in which case it must be indicated that such protected information exists and is only provided to the competent authority. (2) In the event where the EAP or specialist does not comply with sub regulation (1)(a), the proponent or applicant must, prior to conducting public participation as contemplated in chapter 5 of these regulations, appoint another EAP or specialist to externally review all work undertaken by the EAP or specialist, at the applicants cost. (3) An EAP or specialist appointed to externally review the work of an EAP or specialist as contemplated in sub regulation (2), must comply with sub regulation (1).
ECO/ESO	**Environmental Control Officer** – A site agent who needs to ensure that all environmental authorisation and conditions are adhered to during the construction phase of the project
EMPr	**Environmental Management Programme –** can be **defined** as "an **environmental management** tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced".

ESA	**Ecological Support Area –** Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of Pas or CBAs, and are often vital for delivering ecosystem services.
EMPr	**Environmental Management Plan Report –** means a management plan for the activities legally binding if environmental authorisation is issued
NEMA	**National Environmental Management Act (Act 107 of 1998) as amended 2017** – national environmental legislation that provides principles for decision-making on matters that affect the environment.
PA	**Protected Area -** A protected area is an area of land or sea that is formally protected by law and managed mainly for biodiversity conservation. Protected areas recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act) are considered formal protected areas in the NPAES. This is a narrower definition of protected areas than the International Union for Conservation of Nature (IUCN) definition.1 The NPAES distinguishes between land-based protected areas, which may protect both terrestrial and freshwater biodiversity features, and marine protected areas.

Contents

1. INTRODUCTION

In accordance with the Integrated Environmental Management Guidelines published by the Department of Forestry, Fisheries, and the Environment (DFFE) in 1992, the purpose of an Environmental Management Programme (EMPr) is "to describe how negative environmental impacts will be managed, rehabilitated or monitored and how positive impacts will be maximised".

Section 28 of NEMA (National Environmental Management Act, Act 107 of 1998) states that:
Duty of care and remediation of environmental damage -
"(1) Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped, to minimise and rectify such pollution or degradation of the environment"

This draft EMPr must be read in conjunction with the S24G application form and all related appendices dated April 2025; the full impact assessment is included as Appendix M which must be read by all parties. All recommendations, relevant conditions and mitigation measures provided in these documents have been included in the EMPr and must be adhered to.

This EMPr must form an integral part of the contract documents, as it outlines the methodology & duties required so that the project objectives can be achieved in an environmentally sustainable manner; with particular reference to the prevention and mitigation of environmental impacts caused by planning, construction and operational phases and activities associated with this project.

These requirements will have a financial impact on the project's planning, design, construction and operational costings.

This EMPr is a dynamic document that may require updating during the project phases in response to new and changing circumstances to mitigate environmental impacts.
Relevant changes and updated EMPr must be submitted to the DEADP for approval.

1.2 Purpose of the EMPr

The purpose of this EMPr is to ensure that the negative environmental impacts of the proposed and existing activities are managed, mitigated and kept to a minimum during the planning, construction and operational phases of the proposed development. The EMPr focuses on providing practical measures to avoiding negative environmental impacts and enhance positive environmental impacts where possible.
Once the EMPr is approved by DEA&DP it is seen as a legal binding document on the following affected parties:

1 Project Applicant.
2 Project planning team including engineers, landscapers, architects
3 All contractors and subcontractors
4 Operational management team (including staff and maintenance teams)

Copies of this EMPr must be kept on site and all senior personnel are expected to familiarise themselves with the content of this EMPr.
Method statements compiled by contractors must be aligned to relevant conditions in the EMPr and any conditions of the EA (if attained). (Planning and construction Phase)
Operational management must be aligned with relevant conditions in the EMPr and any conditions of the EA (if attained). (Planning and operational Phase)

It is suggested that the EMPr be reviewed on a 5 yearly basis if required. Should any amendments need to be made during operational phase, written authorisation should be obtained from DEA&DP.

1.2 The Polluter-Pays Principle

This principle provides for "the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment."

2. PROJECT DETAILS

The project details are provided in the S24G application and is not repeated here.

The following activities included in Listing Notices (LN) 1 and 3 of the 2014 Environmental Impact Assessment (EIA) Regulations (as amended, 2071) published in terms of National Environmental Management Act (Act 107 of 1998) (NEMA) have been assessed:

- Clearance of indigenous vegetation (LN3, activity 12; LN 1 activity 27)
- Change of land use from agriculture to light industrial use (LN1, Activity 28)

The main impacts associated with the activities include the following:

- Loss of indigenous vegetation
- Impact on terrestrial ecosystem and associated biodiversity
- Fire risk
- Susceptibility of some areas to erosion
- Invasion by exotic and alien invasive species and ongoing removal
- Impact on socio-economic conditions as a result of employment opportunities
- Impact on socio-economic conditions as a result of light industrial activities

The EMPr contains all the mitigation measures to prevent / reduce negative environmental impacts and enhance positive impacts.

3. LEGISLATIVE REQUIREMENTS

3.1 Signing of the EMPr

The acknowledgement form at the back of the approved EMPr is to be signed by the holder of the Environmental Authorisation (the Applicant), the operational managers, any contractors / subcontractors; acknowledging that all parties are familiar with the requirements of the EMPr. All employees, especially the machine and equipment operators, are to be made aware of the conditions as contained in the EMPr as well as the contractual conditions relating to the environment as contained in the contract document.

3.2 Legislation

Of importance are all national, provincial and municipal by-laws and regulations. Statutes are amended periodically and it is the Applicant's responsibility to identify legislation relevant to the proposed activity.

3.3. Project Responsibilities

Responsibility for the implementation of the EMPr lies with the Applicant who must retain the services of a suitably experienced Environmental Assessment Practioner (EA) and / or Environmental control Officer (as relevant to activity) who will monitor any construction and operational activities as required.
The project Applicant will be responsible for the following:

- Adhering to the approved EMPr.
- Ensure that all employed operational managers, staff and any appointed contractors, architects, engineers (as applicable) are aware of and understand the conditions of the EMPr.
- Has the right to remove any person or personnel from site if in contravention with the EMPr.
- Ensure that all contracts include the authorised EMPr.
- Appoint an experienced Environmental Assessment Practioner (EA) and / or Environmental control Officer and / or specialist (as required and relevant to activity / monitoring requirement)
- The project Applicant (holder of the Environmental Authorisation of the EMPr) must notify the competent authority of the commencement of construction / maintenance activities 14 days prior to such commencement taking place.

Construction ECO's responsibilities must include, *inter alia*:

- Secure the protection and rehabilitation of the environment.
- Guide, advise and consult the relevant authority on environmental issues during construction.
- Guide, advise and consult any sub-contractors, suppliers etc. who will be involved in this project.
- Revise the EMPr as required and inform the relevant parties of the changes.
- Ensure that the EMPr has been accepted and understood as a contractually binding document on all parties involved with this project.
- Ensure staff operating equipment are adequately trained, certified and sensitised to any potential hazards / risks associated with their tasks.
- Educate staff as to the need to refrain from indiscriminate waste disposal and/or pollution of local soil and water resources, ensure that they (the staff) have received the necessary safety training, and are aware of the importance of a "clean-site policy".
- Educate staff as to the need to refrain from disturbance to all fauna and flora on site with exception of those activities included in the EMP and relate to fire management and alien invasive species.
- The management guidelines contained in this document must form part of the contractual agreements between the Applicant, Contractor and the ECO.

EAP / specialist responsibilities must include, *inter alia*:

- Carrying out monitoring and accompanying report as required

The Engineer/s and / or architect and / or contractors are responsible for the design and construction of the predator and elephant enclosures, dam, crossings at watercourses.

The operational management team is responsible for the agricultural activities, game farming activities, and associated rehabilitation, AIS and revegetation activities, road upgrades or the maintenance of dwellings, structures, enclosures, reservoirs, dams, crossings and roads.

The responsibilities indicated here are also relevant to Sub-Contractors. The responsibilities of the construction and operational management teams include but are not limited to the following:

- Adhere with the conditions and recommendations of the EMPr.

- Prevent actions that may cause harm to the environment.
- Be responsible for any remedial activities in response to an environmental incident within their scope of influence.
- Ensure compliance of all site personnel and / or visitors to the EMPr

All fines for noncompliance of EMPr to be predetermined by EAP and Project Applicant, this needs to be included in any method statements required for authorised construction activities taking place on the farm portions.

4. REPORTING PROCEDURES

4.1 Documentation

The following documentation must be kept on site in order to record compliance with the EMPr:
An Environmental File which includes:

- Copy of the EMPr;
- Copy of the EA;
- Copy of all other licences/permits;
- Construction Method Statements as required
- Non-conformance Reports;
- Environmental register, which shall include:
  - Communications Register – including records of complaints, minutes and attendance registers of all environmental meetings;
  - Monitoring Results – including environmental monitoring reports, register of audits, non-conformance reports; and
  - Incident book – including copies of notification of Emergencies and Incidents, this must be accompanied by a photographic record.
- Waste Documentation such as, but not necessarily limited to: Waste Manifest Documents;
- Material Safety Data Sheets (MSDSs) for any hazardous substances; and
- Written Corrective Action Instructions.

Reporting to DEADP – monthly during construction; annual during operations

4.2. Environmental Register

The Applicant will put in place an Environmental Register and will ensure that the following information is recorded for all complaints / incidents:

- Nature of complaint / incident.
- Causes of complaint / incident.
- Party/parties responsible for causing complaint / incident.
- Immediate actions undertaken to stop / reduce / contain the causes of the complaint / incident.
- Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint / incident.
- Timeframes and the parties responsible for the implementation of the corrective or remedial actions.
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented.

- Copies of all correspondence received regarding complaints/incidents.

4.3. Non-Conformance Report

A Non-Conformance Report (NCR) will be issued to the Applicant as a final step towards rectifying a failure in complying with a requirement of the EMPr. This will be issued by the ECO to the Applicant in writing. Preceding the issuing of a NCR, the Applicant must be given an opportunity to rectify the issue.

Should the ECO assess an incident or issue and find it to be significant (e.g. non-repairable damage to the environment), it will be reported to the relevant authorities and immediately escalated to the level of a NCR. The following information should be recorded in the NCR:

- Details of non-conformance;
- Any plant or equipment involved;
- Any chemicals or hazardous substances involved;
- Work procedures not followed;
- Any other physical aspects;
- Nature of the risk;
- Actions agreed to by all parties following consultation to adequately address the non-conformance in terms of specific control measures and should take the hierarchy of controls into account;
- Agreed timeframe by which the actions documented in the NCR must be carried out; and
- ECO should verify that the agreed actions have taken place by the agreed completion date, when completed satisfactorily; the ECO and Applicant should sign the Close-Out portion of the Non-Conformance Form and file it with the contract documentation.

4.4. Emergency Response

The Applicants environmental emergency procedures must ensure appropriate responses to unexpected / accidental actions / incidents that could cause environmental impacts.

The Environmental Emergency Response Plan is separate to the Health and Safety Plan as it is aimed at responding specifically to environmental incidents and must ensure and include the following:

- Employees shall be adequately trained in terms of incidents and emergency situations;
- Details of the organisation (i.e. manpower) and responsibilities, accountability and liability of personnel;
- A list of key personnel and contact numbers;
- Details of emergency services (e.g. the fire department / on-site fire detail, spill clean-up services) shall be listed;
- 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 any hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

5. ENVIRONMENTAL MANAGEMENT PROGRAMME

It is imperative that mitigation measures are strictly adhered to and that all measures are taken wherever possible to minimize negative impacts and enhance positive impacts on the environment.

1. PLANNING AND DESIGN

The previous and proposed activities requires a number of approvals to be in place prior to the start of construction of new activities.

The property was originally utilised for agriculture (crop production) but has not been farmed since 2014. In 2020 approximately 2.5 ha of the property was cleared (south eastern corner). On 31 October 2022, the Provincial Department of Environmental Affairs & Development Planning (DEADP) issued a Pre-Compliance Notice to Ideal Trading informing that the activities undertaken to develop a brickworks are deemed to be unauthorised since vegetation was removed and material was excavated/moved without prior Environmental Authorisation. Clearing activities ceased; Ideal Trading was given the option to either apply for retrospective authorisation through means of a Section 24G process, or to restore and rehabilitate the area to its natural condition. Ideal Trading opted to restore and rehabilitate the affected area. The rehabilitation plan was accepted on 7 February 2023. No further development activities have since taken place (DEADP Reference: 14/1/1/E3/9/2/3/L1270/22).

The new landowner (Sapphire Ocean Investments (RF) (Pty) Ltd) acquired the land in 2023 and is proposing to develop a mixed use / light industrial development on the property. The proposed development envisages the development of 183 storage units and 40 light industrial workshops.

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the 2014 Environmental Impact Assessment (EIA) regulations (as amended, 2017), the proposed development requires an environmental authorisation (EA) to be issued by the Western Department of Environmental Affairs and Development Planning (DEADP) prior to the commencement of construction. A S24G application process will be followed due to clearing of the land that took place without the required Environmental Authorisation (EA).

Correct planning will assist in ensuring that measures are in place to avoid and prevent significant impacts (environmental, social and economic) and ensure that measures are in place to ensure effective operations of the site and associated workshop facilities and supporting bulk service infrastructure.

Commencement of construction prior to receiving required approvals can result in project delays. Many approvals will have conditions, and all preconstruction conditions must be in place prior to the start of construction. Correct budget allocation to ensure effective environmental management planning must be carried out during the planning phase.

All Phases

Planning – Planning Team

- Ensure all approvals in place
- Ensure measures have been taken and budget allocated to ensure that all preconstruction requirements are in place prior to construction
- Ensure measures have been taken and budget allocated to ensure that an Environmental Management File is put in place to contain all documents / report which pertain to the relevant conditions of the planning, construction, and operational phases (e.g. EA, permits, waste disposal certificates, training registers, incident registers etc.)
- Ensure layouts, designs, and accompanying drawings are approved by competent engineer

- All preconstruction requirements included as conditions of the Environmental Authorisation (if attained) to be met.
- All preconstruction requirements included as conditions in any other license, authorisation, approval etc. required for the site to be met.
- Method statements for construction phase are to be compiled by the project team and be aligned to mitigation measures and conditions of the Environmental Authorisation (if attained)
- Construction team should include a suitably qualified Environmental site officer to assist with daily environmental management on site and compliance with the CEMP and conditions of the EA (if attained)
- Appoint a suitably qualified external environmental control officer to ensure environmental management requirements are met by carrying out monthly external audits.
- Operational management plans are to be aligned to mitigation measures and conditions of the Environmental Authorisation (if attained)

2. HERITAGE ARCHAEOLOGY AND PALEONTOLOGY

Construction Phase – Construction and Planning Teams

- Construction managers/foremen/ ESO should be informed before construction starts on the possible types of archaeological and paleontological materials they may encounter and the procedures to follow when they find sites. The paleontological assessment provides further details
- ESO to supervise site clearing; If resources are unearthed during construction, the find brought to the immediate attention of the developer and all work is to be stopped immediately and reported by the ECO accompanied by photographs and coordinates. This must be sent to a specialist / WC Heritage as soon as possible to inspect the findings. Any recommendations followed from such an investigation must be carried out.
- The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found;
- The ECO or site agent must compile a Preliminary Report and fill in the attached Fossil Discoveries: Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including: The date
    - A description of the discovery
    - A description of the fossil and its context (e.g. position and depth of find)
    - Where and how the find has been stored
    - Photographs to accompany the preliminary report (the more the better):
    - A scale must be used
    - Photos of location from several angles
    - Photos of vertical section should be provided
    - Digital images of hole showing vertical section (side);
    - Digital images of fossil or fossils.
- Upon receipt of this Preliminary Report, SAHRA / WC Heritage will inform the ECO or site agent whether a rescue excavation or rescue collection by a palaeontologist is necessary.
- Exposed finds must be stabilised where they are unstable and the site capped, e.g., with a plastic sheet or sandbags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation.
- If the find cannot be stabilised, the fossil may be collected with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove all the fossil material, and any breakage of fossil material must be avoided at all costs.

Operational Phase - Operational and Planning Teams

- Operational Phase – follow procedure if any artefacts discovered in operational phase

3. TERRESTRIAL BIODIVERSITY

Planning – Planning team and final SDP

- The proposed northern western section of the site has been avoided in the proposed SDP included in the engineering bulk services report due to steep terrains. This SDP is preferred over the initial SDP, however the mapped CBA in terms of the WC BCP is recommended to be completely avoided to completely avoid disturbance to artificial wetland in this area; this will require a slight reduction in the hard development footprint in this area as per SDP 3 in Appendix D4 (environmentally preferred)
- The smaller CBA on the NNW section is also avoided in the alternative SDP due to steep terrain. This must be designated as a no-go area.
- The CBA identified in the SW section is fragmented and adjacent to existing WWTW. It is recommended that all workshops be planned in this SW portion, with the NW portion being a mix of storage and workshops with the storage located closest to the CBA. This will act as a buffer between ongoing human activities and the CBA and wetland areas.

Construction – Project and Construction Team

- Blanket clearing of vegetation must be limited to the development footprint, and the area to be cleared must be demarcated before any clearing commences.
- No clearing outside of footprint to take place.
- Method statements for construction must be compiled by the construction team and approved by the ECO prior to construction.
- All construction activities must remain with development footprint.
- Movement of workers must be limited to areas under construction.
- All staff must be briefed about the layout of the construction site and must be made aware of the no-go areas as the surrounding environment is sensitive and must not be disturbed.

Operations – Planning and Operational Team

- Maintenance activities to stay within demarcated activity and demarcate and remain within footprint. As per construction mitigations.

4. Flora species of conservation concern and indigenous vegetation

- A pre-commencement flora search and rescue procedure is to be carried out prior to start of site clearing.
- Permits for the removal and/or translocation of protected species must be obtained prior to the clearance of vegetation. These species can be used for rehabilitation/landscaping of disturbed areas that do not form part of the development footprint. The following species are protected in terms of Schedule 4 of the WC Nature Conservation Law Amendment Act, 2000 and therefore require permits for removal and/or translocation:
    - *Carpobrotus deliciosus (LC)*
    - *Ruschia sp. –*
    - *Aloe maculata (LC)*
    - *Bobartia robusta (LC)*
    - *Strelitzia nicolai (LC)*
- If permits are required:

    - Notify local harvesters of plants that need to be rescued via the ward councillor to determine whether the plants would be required by local traditional healers (traditional healers prefer to collect from the wild and not after the plant has been collected and stored in a nursery)
    - Allow 3 months for permit application process
    - Keep permits on record
    - Relocate to suitable area of similar vegetation, outside construction disturbance area; keep for rehabilitation / traditional healer permitted to use plant
- Stripped vegetation and topsoil should be temporarily stored in designated area (compost area) during construction phase and to be used later to rehabilitate disturbed areas and stabilize slopes. This excludes alien invasive species.
- Workers are NOT allowed to disturb any flora species outside of development footprint with exception of AIS. Spot checks of pockets and bags recommended to be done on a regular basis
- No vegetation may be used as firewood. -No open fires permitted on site.
- The closure of the site will involve removal of all debris and rehabilitation of areas disturbed during the construction phase of the project. This will comprise the scarification of compacted areas, reshaping of areas, topsoiling and rehabilitating all prepared surfaces.
- Only indigenous species must be used for rehabilitation outside of the development footprint.
- All impacted areas that do not form part of the development must be rehabilitated using indigenous vegetation.
- The surface of the processing areas especially if compacted due to hauling and dumping operations shall be scarified to a depth of at least 200 mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.
- Mulch and topsoil shall be placed on disturbed area and planted / seeded with indigenous grasses and plants
- Adequate management, maintenance and monitoring will be carried out three month post closure to ensure successful rehabilitation of the property until a closure certificate is obtained.

Operations – Planning and Operational Team

- As per construction mitigations.

5. Fauna management and monitoring

Planning and design

Fences / walls

- Permeable internal and external fences/walls to allow for the movement of fauna through the development. These must have ground level gaps of 10cm x 10cm at 10m intervals. These gaps must be kept free of obstructions, including plant growth and debris.

Stormwater / drainage / erosion control structures

- All guttering and kerbstones must be sloped i.e. 450deg or less on either side / kerbstone slanted or lowered to allow for easy passage of small fauna
- Steep sided drains, gutters, canals and open pits/trenches to be covered with mesh (5mm x 5mm) to prevent fauna falling in and getting stuck. No unnecessary structures that would act as pitfall traps for animals must be constructed
- If there are retaining walls, steps should be formed to allow for small fauna (e.g toads) to move over them; these are to vegetated

Lighting

- No construction night lighting must be allowed. If required, minimise lighting in open space areas within development and any external lights must be down lights placed as low as possible and installation of low UV emitting lights, such as most LEDs.
- Any external lights required during the operational phase must be down lights, with low UV emittance. Lights should not be pointed outward or towards the sky

Pre-construction

Search and rescue

- Fauna search and rescue to be carried out prior to commencement; specialist is to take note of expected fauna identified in assessment and searches in early evening are recommended due to the nocturnal nature of the mammals on site.
- Any permits for sensitive fauna species of conservational concern to be in place prior to construction. Note that species listed in terms of the WC Nature Conservation Law Amendment Act, 2000, including most birds, all tortoises, frogs, toads and lizards are also protected and also require permits. Sites with eggs or chicks are protected sites. Fast moving animals will naturally move away however care must be taken with the slow-moving animals . immobile animal (e.g nesting birds, tortoises) found prior to start of construction must be relocated with required permits issued by Cape Nature and relocated as required. The contractor is to allow 3 months for a search and rescue permit process.

Staff awareness

- Staff must be made aware what all SCC looks like and to report all fauna occurring on site to the SEO who will report to external ECO.
- Weekly toolbox talks should be held, during which the ECO should remind all staff of construction phase mitigation measures
- A clause must be included in contracts for ALL construction personnel (i.e. including contractors) working on site stating that: “no wild animals will be hunted, killed, poisoned, or captured. No wild animals will be imported into, exported from or transported in or through the province. No wild animals will be sold, bought, donated and no person associated with the development will be in possession of any live wild animal, carcass or anything manufactured from the carcass.” A clause relating to fines, possible dismissal and legal prosecution must be included should any of the above transgressions occur, especially for SCC.
- Contractual fines to be imposed on any employee who is found attempting to harm fauna in surrounding areas.

Site clearing

- Microhabitats (e.g. rock stacks and logs) in the clearing footprint must be relocated to the same habitat immediately adjacent to the removal site. E.g. Rock stacks should be restacked. Rehabilitation efforts outside of the development (eg in 5 meters between boundary and development / SWM pond areas) must provide habitat for faunal species by placing logs and rocks at strategic sites to provide shelter for small mammals and reptiles.

General during construction

- All construction and construction related activities (including parking of vehicles and machinery) must remain within the approved development footprint. No construction and construction related activities are permitted to encroach on neighbouring properties. A fine system must be put in place for transgressions by the developer and included in contractual agreements with all staff and contractors
- The ESO should walk ahead of construction machinery directly prior to vegetation clearance. Should any faunal species be identified during the walk through, these should be allowed to move out of harm’s way prior to vegetation clearance
- No animals are to be harmed or killed during construction activities.

- All open excavations must be securely fenced or barricaded. Excavations must be checked daily for trapped fauna. Trapped animals are to be rescued and released.
- Establish strict speeding regulations during construction phase. All personnel and visitors to abide to speeding regulations. The recommended speed is 20 km/hour on sites of this kind. Signs should be put up along the roads to remind people of speed limits, as well as warnings to look out for small animals on the roads.

Response to fauna on site

- If any animals are seen on site, a photo or a video should be taken if possible (to assists in identification) and all fauna encountered on site should be reported to the ECO immediately. This is particularly important when:
- An animal is harmed or compromised in any way during construction.
- Ground-dwelling animals their nests or eggs are unearthed during earthworks (e.g. moles, tortoise eggs, terrapins/frogs estivating).
- Any animal with limited mobility is found on site (e.g. tortoises, moles, chameleons).
- Any potentially dangerous animal is encountered. This includes any potentially venomous animal (e.g. snakes, scorpions) or any medium-large animal that has become cornered in an enclosed area such that it cannot escape (e.g. porcupines, monkeys, baboons, antelope). It is critical in the case of snakes/ scorpions o get pictures/videos to aid in identification and appropriate treatment of anyone needing medical assistance.
- Any animal that shows a reluctance to escape or move away from the construction site thereby increasing its exposure to harm or increasing the risk of injuring people on site.
- For any injured animals or animals to be removed from site (domestic or wild):
- The ESO and ECO should provide guidance or assistance to get all animals to safety, treating any injured animals, and issuing instructions on when to continue with construction (once they are satisfied that all animals have been removed from site) or put additional mitigation measures in place to protect animals on the site from harm.
- A local SPCA or animal welfare society can collect and treat most animals and should be the first point of call for assistance. If they cannot directly assist, they will revert and notify the relevant authorities/vets.
- For any assistance with snake removals/relocations, identifications, or bite treatment contact the African Snakebite Institute / keep contact details of a trained snake handler within the site office

Operation – Planning and Operational Team

- Implement construction mitigations as required.

6. Alien Invasive species

- Landowners are under legal obligation to control alien plants occurring on their properties. Alien Invasive Plants require removal in terms of the Conservation of Agricultural Resources Act 43 of 1983 (CARA) and the National Environmental Management: Biodiversity Act (10 of 2004; NEMBA): Alien and Invasive Species Lists (GN R598 and GN R599 of 2014).
- Twelve (12) AIS were recorded within the project area, five (5) of which are categorised in terms of the National Environmental Management: Biodiversity Act (NEM:BA) (Act No. 10 0f 2004) and/or the Conservation of Agricultural Resources Act (CARA) (Act No. 43 of 1983). For the purposes of this development, all Category 1b and 2 species listed under NEM:BA and all Category 1 and 2 species listed under CARA need to be removed, and ongoing follow up measures implemented to ensure that individuals do not return.
- List of potential AIS identified in terrestrial biodiversity report (Appendix H1)

SCIENTIFIC NAME	COMMON NAME	FAMILY	NEMBA	CARA
Acacia mearnsii	Black wattle	Fabaceae	2	2
Acacia cyclops	Green wattle	Fabaceae		
Lantana camara	Lantana	Verbenaceae	1b	1

Atriplex semibaccata	Pine	Amaranthaceae		
Persicaria lapathifolia	smartweed	Polygonaceae		
Agave americana	Agave	Asparagaceae	3	
Schkuhria pinnata	dwarf Mexican marigold	Asteraceae		
Tagetes minuta	Khakibos	Asteraceae		
Ficus elastica	Rubber vine	Moraceae		
Arundo donax	giant reed	Poaceae		1
Cortaderia selloana	pampas grass	Poaceae	1b	1
Paspalum dilatatum	Dallas grass	Poaceae		

Construction

- Construction sites to be kept free from AIS as per CARA/NEMBA requirements.
- An Alien Invasive Management Method Statement for the site must be compiled and implemented during construction and include the following:
- ESO, contractor and staff to familiarise themselves with common AIS in the area
- AIS must be cleared by hand (i.e. when young and first detected) before the use of mechanical or chemical treatment. No heavy machinery is permitted in the no-go areas and SWMP areas for AIS clearing. This must be done using hand tool only and subsequent chemical treatment (kaput) / ring barking as required.
- Removal of AIS to be done according to the Working for Water Guidelines.
- The Contractor is responsible for the removal of AIS within all areas disturbed during construction activities. Disturbed areas include (but are not limited to) access roads, construction camps, site areas and temporary storage / laydown areas.
- AIS plant material (including brushwood and seeds) should be removed from site and disposed of at a registered waste disposal site. Should brushwood be utilised for soil stabilization or mulching, it must be seed free.
- After clearing is completed, mulch the area and see / plant indigenous plants, should natural re-vegetation not take place in a timely manner (within 2 weeks)
- A three month follow up is required to determine AIS removal and revegation of disturbed areas.

Operational

- An AIS management levy is recommended to be charged to all workshops as part of levy / rent agreement
- The entire site particularly the SWM ponds and no-go areas to be kept free of alien tree growth / regrowth throughout operational phase as per CARA/NEMBA requirements.
- Put in place AIS management programme for operational phase.
- AIS must be cleared by hand (i.e. when young and first detected) before the use of mechanical or chemical treatment. No heavy machinery is permitted in the no-go areas and SWMP areas for AIS clearing. This must be done using hand tool only and subsequent chemical treatment (kaput) / ring barking as required.
- Removal of AIS to be done according to the Working for Water Guidelines.
- AIS is recommended to be audited annually as part of the recommended annual environmental compliance audit

7. FIRE RISK And RESPONSE MANAGEMENT

Planning, construction, operations

- No cigarette butts or burning substances are permitted to be released into the environment. All cigarette butts to be extinguished first and then disposed of in a waste receptacle (sand buckets) provided.
- Ensure all emergency numbers are in place and visible
- Emergency preparedness plan to be put in place to fight accidental fires on site / adjacent to site, should they occur. The adjacent landowners/users/managers should also be informed or otherwise involved as required.
- No open fires permitted on site for cooking purposes; if such an area is required, an enclosed fire -safe area should be provided for duration of construction equipped with all relevant safety measures and equipment. The

area must be away from flammable stores. “Low smoke” fuels must be used (e.g., charcoal) and smoke control regulations, considered.

- Fire-fighting equipment must be in place on site, including fire extinguishers and emergency fire water.
- Fires and “hot work” must be restricted to demarcated areas.
- Precautions when working with welding or grinding equipment near potential sources of combustion. Such precautions include having a suitable, tested and approved fire extinguisher immediately at hand and the use of welding curtains (refer to HSA and OSHA)

Fire preparedness and response

- Job specific training to be provided to individuals responsible for dealing with fire management.
- If a fire is detected it must be attended to immediately;
- Adequate fire-fighting measures must be available and readily accessible on site.
- Fire-proof hedges (Esler et al., 2014) can be made with indigenous thicket species to reduce fire risk around the built environment. This could be around building and in the 5 meter buffer around perimeter of development with exception of steep northern CBA where fynbos will remain.
- AIS management must be put in place
- Ensure all emergency numbers are always in place and visible.

Fire Management plan recommendations

- Mechanical clearing
- Selectively thin areas where the veld is old, or where invasive species are becoming more dominant.
- The thinning and cutting of vegetation will mimic an aspect of the effect of fire.
- Utilization of biomass cleared (excluding that of cleared invasive or alien plants):
- Distribute chipped material evenly and thinly to avoid fire hazards.
- Become member of South Cape Fire prevention association

8. Soil Management

Planning – Planning team

- It is recommended that both artificial dams on the site be retained as part of SW management (SDP 3 – Appendix D4)
- Soft landscaping and rainwater tanks are recommended to be incorporated into the water / stormwater management
- Design the proposed development site to follow natural contour lines as far as possible.
- Ensure the site is appropriately levelled to fit in with current topography levels of adjacent areas
- Suitable measures must be implemented in areas susceptible to erosion.

Construction and Operations where applicable to maintenance activities

- Prepare method statement to indicate how soil will be managed during site clearing and must include these mitigation measure:
- Site clearing to be done in phased manner. No blanket clearing of vegetation is permitted to avoid large areas of unconsolidated soils;
- Excavated material and stockpiles must be placed outside of the pond areas and sediment must be prevented from being washed downslope.

Topsoil and vegetation management

- Topsoil should be cleared in a phased manner and placed on designated level areas; Designated area/s for storage of topsoil to be selected in conjunction with ESO and ECO; area/s selected should be an area which will not be disturbed from construction activities for duration of construction period. The topsoil will be invaluable during rehabilitation otherwise the project will need to buy in topsoil / mulch / plants for landscaping.
- Topsoil includes 150 to 250 mm of soil and needs to be stripped separately. Topsoil and vegetation on the site in new excavation areas must be stripped to a maximum depth of 30cm.
- Topsoil and vegetation is to be kept in designated piles of maximum 1 m in height in a designated topsoil /compost area, to prevent anaerobic conditions from smothering seeds and rendering them inviable and must be suitably covered with shade cloth (or another breathable material with a fine mesh) to prevent any additional invasive species seeds from falling in and establishing in the soil.
- Topsoil shall be kept separate from sub soils and shall not be used for building or maintenance of roads.

Subsoil management

- Excavated material (subsoil and rocks) generated on site to be used as fill material for site levelling.
- Designated areas for storage of topsoil and subsoil to be on level areas - This must be done to avoid double handling soils. Stockpile subsoils separately in designated and demarcated area; use as fill material for levelling. Wet / cover / stabilise with vegetation to prevent loss and dust generation.
- This is to be stockpiles separately to topsoil / vegetation.
- Cover subsoils with shade cloth to prevent dust /loss of material

General

- Do not create multiple tracks
- Do not drive over stockpiles and compact soil
- All materials, stockpiles and ablutions to be placed outside identified drainage zones on the site
- As necessary, dampen exposed soil areas on very windy days (>45 km/hr wind speeds) to prevent soil erosion by wind / dust generation. A water cart or sufficient watering equipment should be available to wet soils during windy days if wind-blown sand and dust becomes a problem. During strong wind conditions it may be necessary to halt operations until conditions improve.
- Rehabilitate open areas with stockpiled topsoil and indigenous seeds on completion of construction area as per landscaping requirements and stormwater pond areas.

9. Aquatic systems

Planning – Planning Team

- Remove development from mapped CBA in northern western portion and retain this area with artificial wetland (as per revised SDP, Appendix D4)
- During construction, the edge of the development footprint relative to the ponds should be clearly marked and considered as a No-Go Area. Excavated material and stockpiles must be placed outside of these areas and sediment must be prevented from being washed downslope.
- Put SWM ponds in place as a first step in the sequence of events to cater for Stormwater management during construction phase;
- Stormwater management should focus on introducing runoff responsibly into the receiving environment and implement the SUDs design proposed in the engineering report. E.g. Incorporate catchment of runoff from roofs using rainwater tanks and allowing this water to be suitably filtered and used on the site for all water use requirements. There is minimal landscaping so irrigating with this water is not an option. Incorporate permeable pavers as sandy nature of soil will allow for rapid infiltration reduction stormwater overflow form hard surfaces.

- Make use of permeable pavers and incorporate soft landscaping where possible
- Ensure the western access road is equipped with suitable measures to allow drainage to the SW pond adjacent to the access road (e.g, small culvert or similar)
- Development should follow the natural topography of the site wherever feasible, minimizing cut-and-fill and maintaining gentle, stable slopes for operational areas

Construction and Operations

- Prevent pollution of freshwater ecosystems by the proper disposal of construction waste, sewage, and hazardous materials. No contaminated surface runoff or wastewater/ wash water must be allowed to enter the stormwater system or surrounding environment, particularly any chemicals from industrial workshop activities.
- Implement stormwater, erosion control and waste management measures.
- Limit any spills from plant, machines or camps during the construction phase.
- No discharge of dirty water permitted into watercourses / surrounding environment
- Any use of chemical, cement or paint must be carefully monitored.
- Ensure required spill kits are in place.
- Provide suitable solid / liquid waste management that is serviced regularly.
- Temporary drainage works may be required to prevent stormwater to prevent silt laden surface water from draining into watercourses.
- Stormwater must be prevented from entering or running off site.
- During construction, temporary slopes may be profiled up to a maximum of 1:3 (V:H), provided appropriate erosion and sediment control measures are implemented. Diversion channels should be constructed ahead of the open cuts, and above stockpiles to intercept clean runoff and divert it around disturbed areas into the natural drainage system downstream of the site.
- Rehabilitation is necessary to control erosion and sedimentation of all eroded areas (where works will take place).
- Existing vegetation must be retained as far as possible to minimise erosion problems. All open ground areas must be mulched and vegetated with suitable groundcover and indigenous vegetation to manage erosion and stormwater absorption. Make use of vegetation instead of concrete wherever possible. Areas where construction is completed should be rehabilitated immediately.
- Visual inspections will be done on a regular basis regarding the stability of water control structure, erosion and siltation.
- The development must be inspected regularly for any sewage leaks, waste/ wastewater spills, and for any discharging of 'dirty' / contaminated water from the facility. This must be enforced, and any owners, tenants and workers must be aware of these restrictions.
  The stormwater infrastructure should be checked annually and following every high rainfall event to ensure it is working effectively.

10. Visual Impact management

Planning and design

- Select yellow / dim lights which are less attractive to insects than bright white or blue lights
- Design elements to include lights facing toward ground rather than facing up towards the sky

Construction

- Construction to take place during daylight hours - the site can be adequately monitored for fauna during work hours, and the use of artificial lighting at night will be prevented.

- Ensure good housekeeping measures on site; put in place all construction mitigation measures to reduce visual impacts
- A complaints register should be kept to document complaints and the corrective action taken.
- Light pollution must be reduced and avoided wherever possible

Operations

- Good housekeeping measures required for storage areas and for each workshop
- Maintain lighting as required

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11. Noise Impact Management

Planning and Construction, Operations

- Provide 2 weeks' notice to surrounding landowners of start of proposed development; communicate via local radio stations and ward councillors.
- No loud music to be allowed on site.
- All vehicles and machinery must be kept in good working condition.
- Working hours and deliveries / collections to be restricted to day time hours (i.e. 8 am to 5pm)
- No machinery permitted on Saturdays; no construction work to take place on Sundays / public holidays
- Ensure details of contractor, engineer, site control officer and ECO are displayed to the public to allow for communication between project members and community members
- Ensure complaints register and community liaison officer is in place to record complaints and respond to complaints
- Ensure all activities comply to the Mossel Bay Municipality: Zoning Scheme By-law, 2021 as applicable to mixed / light industrial land use
- *No activities shall be carried out which constitute or are likely to constitute a source of nuisance, including the use of equipment that generates excessive noise, or any activity which results in the generation of dust, fumes, smoke, or waste material which could be detrimental to health, or which requires special waste removal processes;*

12. General waste and hazardous materials

General waste management

- The waste management hierarchy – avoid, reduce, reuse, recycle, dispose is to be followed throughout construction and operational phase
- Determine general waste streams and quantities to ensure provision of adequate waste management facilities on site;
- Investigate disposal / reuse/ recycling services in the local area.
- Include details of waste stream and preferred management option in general waste management method statement and include the following:
- Receptacles (covered, labelled) to be provided for smaller general waste items generate on site. If waste will be recycled, provide separately labelled receptacle as required per waste stream. Reuse and recycling must be considered before disposal.
- All waste stored on site must be designated bins equipped with lids that can be secured / stored in a secure area when construction is not taking place (evenings, weekends, holidays, etc.) to prevent interference by animals.
- All waste, particularly food waste, should be regularly removed from the property and disposed of appropriately to prevent the scent of old products increasing the attractiveness to the disposal area and

surrounding development for wildlife / if it is composted on site, it must be done using combination of anaerobic and aerobic process within sealed room / container.

- General Waste receptacles should be emptied on a regular basis.
- Excavated material from site levelling will as far as possible be used on-site as fill material. Excess excavated material that cannot be used in this way will be exported from the site and reused as fill at other construction activities elsewhere in MBM or disposed of at an appropriately licensed waste disposal facility. Construction waste (e.g. packaging material, unused concrete) not reused / recycled must be disposed of at an appropriately licensed waste disposal facility.
- Alien invasive material to be placed in bags (if kept on site for any period of time) / removed offsite immediately for disposal at registered waste site.
- No burning of waste.
- No dumping or burial of waste
- No littering, waste dumping or burning is allowed on the site or in the surrounding environment.
- Designated waste management areas – spoil stockpiles, AIS seed material, paper / plastic / tins, food waste
- Proof recycling / reuse / legal disposal must be kept on record by ESO for audit purposes.
- A waste management plan for operational phase should be prepared by each workshop detailing types and volumes generated and

Hazardous materials management

Planning, Construction, Operations

- Identify hazardous materials required
- Prepare method statement indicating what hazardous substance (fuel, oil, sewage etc.) will be on site will be generated and how they will be managed.
- Any fuel and other hazardous substances to be stored on site in bunded area equipped with roof under lock and key with appropriate signage. Fuels and hazardous liquids must be stored in an impervious, bunded and covered area with a capacity of 110% of the largest single storage tank.
- If generators are refuelled on site, they must be placed on trays, which rest on clean sand and once construction is complete this must be removed from the site and disposed of at an appropriately registered waste disposal facility.
- Drip trays are required to be placed under all equipment using fuels /oils.
- Complete spill kits with accompanying storage container required to be on site equipped with hazardous bin for placement of spills cleaned up using absorbents
- Hazardous bins required for storage of any hazardous waste materials.
- Wash station to be provided for cleaning of hazardous paint / building materials. Wash water may not be disposed to watercourses or the natural environment. This must be disposed at a facility that can accept hazardous waste water and details of service provider and proof must be kept on record.
- Do not leave machinery / vehicles running unnecessarily. Service machines and vehicles regularly to prevent unnecessary fumes and leaks.
- Construction machinery must be stored in an appropriately sealed area. Vehicles and construction equipment should not be serviced at the site to prevent pollution of the soils by hydrocarbons or oil.
- Leaking or empty drums must be removed from the site immediately and disposed of via a registered waste disposal contractor or at a registered waste disposal site.
- If repairs of vehicles must take place on site, an appropriate drip tray must be used to contain any fuel or oils.
- The risk of spilling fuel is at its greatest during refuelling of vehicles and plants. Refuel in designated area, on an impermeable surface well away from any drainage lines or watercourses.

Concrete, cement, plastering, and painting

- Mixing areas be clearly defined on the site and must be surrounded by an impermeable material (i.e. create a temporary coffer dam with sandbags and thick plastic sheeting) to prevent any runoff and absorption into the surrounding soils.
- The designated mixing areas should be limited to areas that will become future hard surfaces on the site. No concrete and cement mixing are allowed in areas outside of the proposed hardened surfaces of the camping block.
- No concrete and cement mixing are allowed in areas outside the site development area
- Cleaning of cement, plastering & paint equipment must be done into a designated, bunded, & lined slurry sump or container to avoid contaminating the environment.

General

- No placement of waste storage / hazardous material storage areas within no go areas (ponds and 5 meter buffer of ponds)
- Any contaminated/polluted soil removed from the site must be disposed of at a licensed hazardous waste disposal facility.
- An incident/complaints register must be established and maintained on-site. Corrective action must be undertaken immediately if a complaint is received, or potential/actual leak or spill of polluting substance identified. This includes stopping the contaminant from further escaping, cleaning up the affected environment as much as practically possible and implementing preventive measures.
- Should a polluting incident occur, the Resident Engineer or his representative shall immediately contact the regional office of the Department of Water and Sanitation (as required by the National Water Act). Clean-up shall take place in consultation with the Department of Water and Sanitation.
- The Resident Engineer or his representative shall ensure that all precautions are taken to ensure that no surface or ground water becomes polluted. Any deliberate or unplanned pollution of water is an offence in terms of the National Water Act (Act 36 of 1998) and is punishable with a fine not exceeding R50 000-00 and / or two years imprisonment.
- Upon the completion of construction, the area will be cleared of potentially polluting materials.
- Records of any hazardous waste disposal to be kept
- Spill response training to be provided for sewage spills, leaks, contaminated water
- Hazardous substance management and hazardous waste management plan should be put in place by each workshop detailing control, storage and disposal of any hazardous materials.

13. Social Impact Management

Planning, Construction, and Operations

- Use local labour.
- Use local suppliers of required materials and services where possible.
- Advertise locally making use of local resources for this purpose.
- Use reputable agencies / avenue (i.e. Department of Labor) to screen staff employed.
- Weekly toolbox talks to be held to upskill labour force during construction
- There must be strict access control to and from the site.
- A security guard should be stationed on site for the duration of the construction phase and guard the site 24 / 7.
- Movement of all personnel and workers must be limited to areas under construction.
- Access to surrounding areas is not permitted.
- No employment to take place on site. Employment should take place through reputable recruitment agencies / avenues.

- No cash wages to be paid on site.
- Restrict employment to local residents as far as possible.
- No weapons / alcohol / narcotics allowed on site
- Severe contractual fines imposed for personnel / contract workers bring weapons / alcohol / narcotics on site.
- During operations ensure there is strict access control and security measures are in place (i.e. cameras, security guard)

14. Traffic Management

Design and planning

- Internal roads and access to be constructed first in the sequence of construction activities
- Access gate configuration & stacking distance - A minimum stacking distance of 2 light vehicles or one heavy vehicle or 15m is required at the access gate. The gate design shall provide for access for heavy vehicles and emergency vehicles. It is proposed that separate access lanes (gates) be provided for tenants and visitors.
- Sight Distances - Sight distances at both proposed access points are acceptable in both directions in both the horizontal and vertical alignments with the condition that the overgrown bush be trimmed for the complete road reserve width.
- Ensure the western access road is equipped with suitable measures to allow drainage to the SW pond adjacent to the access road (e.g, small culvert or similar)
- All engineering designs be performed by a registered professional engineer and submitted to the municipality for approval in line with a signed services agreement, prior to construction

Construction

- Keep to a single access point
- Put appropriate road and construction signage in place.
- Road signage should be erected and provided to full municipal standards.
- Ensure strict access control to and from the construction site.
- All construction vehicles are to be monitored to ensure they are not overly full so the likelihood of spillage of debris is prevented.
- Any loose materials transported to / from site must be covered.
- Surrounding area and roads should be monitored for debris and materials associated with the proposed development and cleaned up a soon as such becomes apparent.
- All materials to be delivered in a safe manner at designated delivery area located within footprint of the development site; ensure sufficient space is allocated in the construction site plan to provide safe turning for larger trucks.
- Speed travelled by construction vehicles must be kept to a minimum and speed limits enforced (30km internal roads / 40 km access roads).
- No transport of construction machinery / materials to or from the site to take place on public holidays or weekends.

Operations

- Ensure maintenance of vegetation to maintain safe sight distance at access points

15. Energy management

Planning and operations

- Design and layouts includes measures to reduce operational energy consumption as far as possible

- SLA in place prior to site clearing
- The following measures are recommended to be incorporated into the design to reduce energy demands on the grid:
    - Solar panels
    - Energy efficient lighting
    - Energy saving materials.

16. Sewage management

- Connection to sewage treatment reticulation to Groot Brak WWTW is recommended to be completed first in the sequence of construction events
- SLA in place prior to site clearing
- Until such time as connections and ablutions are in place, provide ablution facilities at a ratio of 1:15 and service regularly by a reputable service provider who disposes at licensed WWTW site and keep proof of service.
- Secure portable toilets to prevent them from being blown over during construction phase.
- Maintain all sewage infrastructure as required and incorporate into maintenance management plan for the site, this must include items (such as nappies and wet wipes and hazardous materials that may not enter the sewage reticulation system as per light industrial zoning requirements and permissible activities)

17. Water management

- Water requirements to be calculated by resident engineer and sources of water to be confirmed prior to the start of construction.
- Avoid leaking taps and pipes / unnecessary water waste.
- Connection to bulk services (water and sewage) is recommended to take place first in sequence of events
- Rainwater tanks are recommended to be incorporated into the design to enable reuse of this water to reduce water demand and reduce stormwater runoff during rainfall events
- SLA in place prior to site clearing

6. EMP Targets

The following is a summary checklist that can be used to ensure compliance to mitigation measures for planning and construction phase:

Targets:

- ✓ EM file in place and consist of EA, EMPr, GA, , required SCC and protected trees permits
- ✓ Final SDP approved
- ✓ Required construction method statements in place
- ✓ Search and rescue carried out as required
- ✓ Waste management measures in place
- ✓ Site control officer for daily inspections
- ✓ ECO for monthly audits
- ✓ Specialist input as required
- ✓ Necessary training provided as per scope of work and records kept i.e., toolbox talks
- ✓ No disturbance of indigenous plants outside development footprint
- ✓ No AIS in construction footprint
- ✓ No disturbance to heritage artefacts
- ✓ No disturbance to fauna
- ✓ Effective stormwater management and erosion controls in place
- ✓ No disturbance to indigenous vegetation outside of development footprint

Aspect: Operational Activities

- ✓ EM file in place and consist of EA, EMPr, GA, , required SCC and protected trees permits
- ✓ AIS clearing carried out as required in open space areas and annual audit
- ✓ Rainwater tanks
- ✓ Solar Panels
- ✓ Effective Waste management measures in place
- ✓ No additional paths / tracks / roads created
- ✓ Effective stormwater management and erosion controls in place
- ✓ No disturbance to indigenous vegetation outside of development footprint

Project Apects to be completed by construction team / maintenance team

Activity:	**Description of activity (i.e. AIS clearing, construction of internal roads, SWM, electric reticulation, workshop, storage etc, maintenance activity)**			
Responsible person:				
Aspect	**Nature / Description**	**Required**		**Notes**
		✓	✘	
Scope of work	Description of scope of work and accompanying method statement / s	✓		
Site office	Required? Location if required?			
Designs / Plans completed	As required for scope of work			
Environmental Training	Environmental training required (i.e. excavations – archaeology; ongoing – litter; AIS)			
Health and safety	As required – HS File, first aid etc.			
Workforce	Number of workers required?			

Activity:	**Description of activity (i.e. AIS clearing, construction of internal roads, SWM, electric reticulation, workshop, storage etc, maintenance activity)**			
Responsible person:				
Aspect	**Nature / Description**	**Required**		**Notes**
		✓	✘	
	Required environmental management training (i.e. waste, soil management etc)			
	Community engaged with to source local labour			
Transport and traffic	Transport required for site workers?			
	Access and parking requirements			
Site clearing	Area to be cleared			
	Permits on hand; Plants removed and transplanted elsewhere in resort			
Vegetation management	No disturbance to vegetation outside footprint	✓		
	Remove alien invasive from footprint as required	✓		
	Pegs / screening material for designating footprint			
Topsoil management	Top 300 mm soil with indigenous vegetation intact			
	Stockpile separately			
	Compost separately as mulch elsewhere in landscaping / public open space area			
Earthworks and subsoil management, erosion control	Area and depth to be excavated			
	Volume of material to be excavated per component			
	Duration of earthworks component			
	Where will excavated material be stored on site; subsoils covered; Rocks for landscaping; excess for landfill;			
	Shade cloths / water cart – dust control			
Building material and equipment	Nature of required materials and equipment			
	Storage requirements / laydown areas for materials / equipment			
	Hazardous materials / substances – sealed containers, bunded area, non-permeable flooring, secure, equipped with roof.			
Waste management	Ablution facilities – Required? Number? Service Provider? Record of service to be kept	✓		
	General waste bins			
	Drip trays, cement mixing trays, plastic liners,			
	Spill kits, hazardous waste bins			
	Skip			
	Service providers			
	Construction rubble – designated area / skip as required			
	General waste – General waste bins with lids and labelled / storage area			
	Hazardous waste – drip trays / spill kits / storage area			
Drinking water and lunch area	Quantity required? Lunch area provided? Source of drinking water?			
Existing structures	Location of existing structures / infrastructures that may be in construction footprint			
Working hours	Working hours – no Sundays, no public holidays, no night time.			

7. COMPLIANCE WITH THE EMPr

6.1 Monitoring and Compliance

The monitoring and compliance of the development should take place as follows:

- The ECO has the authority to instruct the Applicant to cease a particular operation causing or liable to cause significant environmental damage, and issue fines or penalties for non-compliance of the Environmental Management Programme/ EMPr.
- During construction phase an Environmental Control Officer (ECO) must audit the site and compile an audit report on a monthly basis until rehabilitation is successful.
- During operational phase, the site must be audited annually to determine level of AIS and rehabilitation
- The holder of the environmental authorisation (the Applicant) is responsible to ensure that an environmental audit report is submitted to the Department of Environmental Affairs and Development Planning (DEA&DP) as per the timeframes stipulated in the Environmental Authorisation (EA).

6.2 Auditing Process

The terms of reference for the audits must comprise the following:

- Develop a checklist against which the criteria can be referenced during the audit.
- During the audit process, key individuals involved with the management of the project are to be given the opportunity to comment on issues being audited and will be invited to accompany the auditor during the site inspection.
- Compile an audit report on the implementation of the EMPr and compliance to the Environmental Authorisation and submit this report to the competent authority (DEA&DP).

Compliance ratings against which the listed criteria are assessed are as follows:

Symbol	Rating	Interpretation
Y	Yes	Evidence of compliance
P	Partial	Evidence of partial compliance
N	No	Evidence of non-compliance
NR	Not Relevant	The condition or commitment is not relevant at this stage of the development or it is inappropriate
NA	Not Audited	Not audited

6.3 Non-Compliance

Definition

The non-compliance is defined as, and will be issued for:

- Any deviation by the Applicant from the environmental conditions and requirements as set out in the EA and EMPr, or;

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- Any contravention by the Applicant of environmental legislation, or;
- Any unforeseen environmental impact resulting from direct or indirect actions or activities on site that would be considered as a significant impact. Significance will be determined by the Environmental Control Officer (ECO) but will be informed by geographic extent, duration, lasting effects of the impact and extent of remediation to the impact.

Types of non-compliances issued

Two types of non-compliances may be issued:

A. Stop Works Non-Compliance

Stop Works Non-Compliance will require that all works as described in the non-compliance will stop immediately and may only continue on a formal written permission from the ECO.

Stop Works Non-Compliance will be issued under the following conditions:

- Total disregard by the Applicant to the environmental conditions and requirements listed in the EA and EMPr;
- An activity that if left unattended will escalate the degree, severity or extent of the environmental impact.

B. General Non-Compliance

A general non-compliance will allow work and activity by the receiving party to continue while the corrective action takes place.

6.4 Issuing a Non-Compliance

Non-compliance may be issued to:

- The Applicant
- Any representative of the Applicant

6.5 Process of Issuing Non-Compliance

The appointed Environmental Control Officer (ECO) may issue a formal non-compliance to the Applicant. A copy of the non-compliance issued will be placed in the EMPr file. The Applicant will be responsible for returning a formally signed off corrective action (as per template) to the ECO to be placed in the EMPr file. The ECO will be required to sign-off on the corrective action, indicating that it has been completed within the timeframes and to the satisfaction of the ECO.

In the event of damage being caused, the contractor will be responsible for the cost of cleanup, repair and / or rehabilitation as necessary, as well as being liable for the fine. Where there is erosion damage, pollution to the environment, or contravention of the no-go policy, the contractor is required to reinstate the conditions to normal as determined by the ECO. Spot fines up to a maximum value of R10 000 per offence can be instituted at the discretion of the ECO for any breach or non-compliance in terms of the EMPr. Fines issued will increase exponentially for repeat offences.

6.6 Failure to complete corrective actions

In the event that the Applicant fails or refuses to complete the corrective action, either at all or within the allocated timeframe, the ECO shall,

- Inform DEA&DP in writing that a condition of approval for the project is not being met.

The DEA&DP office is responsible for resolving the impasse with the Applicant.

The Applicant is deemed not to have complied with the EA and EMPr if:

- Within the boundaries of the site and site extensions there is evidence of contravention of clauses;
- Environmental damage occurs due to negligence; inappropriate actions taken by the Applicant or any of his staff.

On receiving a notice of non-compliance the Applicant is required to swiftly address the issue/s taking all corrective actions required to rectify the situation. Penalties will be applied for non-compliant situations. Penalties/fines are advocated to ensure corrective measures are successfully undertaken and the necessary standard of rehabilitation is achieved.

The penalty associated with a chemical spill is not a set amount but will depend on the nature and extent of the spill; the cost of any soil and /or groundwater monitoring and any soil and /or groundwater remediation required by authorities will be to the Applicant's account.

The imposition of such a penalties / fines shall not preclude the relevant competent authority from applying an additional penalty in accordance with statutory powers.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression as deemed fit.

6.7 Unlawful Activity/ies

NEMA and its Regulations entitle environmental authorities to administer a fine not exceeding R 5 million or 10 years imprisonment and/or a fine and imprisonment for a person guilty of an unlawful activity. The Act makes allowance for the rectification of unlawful activity and may charge up to R1 million administration fees over and above the remediation costs.

NEMA makes provision for damages to be awarded by the courts where loss or damage has occurred as a result of a contravention of other environmental statutes. Importantly, NEMA provides for the liability of conviction of employees, managers, agents and directors for any offences resulting from the failure to take all the reasonable steps that were necessary under the circumstances to prevent the commission of an offence.

8. AMENDMENTS TO THE EMPr

This EMPr outlines the environmental practices and mitigation measures to be adhered to during the construction, operational phases, and rehabilitation in order to curtail and/or minimise potential negative impacts and promote sound environmental practises.

Any major issues not covered in the EMPr as submitted, will be addressed as an addendum to this EMPr, and submitted for approval. The EMPr is a living document and is subject to change from time to time in consultation with the DEA&DP. Any amendments to the EMPr will require approval from the DEA&DP.

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9. ENFORCING THE EMPr

The holder of the Environmental Authorisation (EA) has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes casual labour, etc.). The EA and EMPr shall be part of the terms of reference for all stakeholders. All senior and supervisory staff members shall familiarise themselves with the full contents of the EA and EMPr. They shall know and understand the specifications of the EA and EMPr and shall be able to assist other staff members in matters relating to the EA and EMPr.

TABLE OF RESPONSIBLE PARTIES BELOW:

Responsibility	Name of Responsible Party
Applicant	
Town Planner	
Engineer/s	
Contractor/s	
Site Environmental Control Officer	
Construction ECO (independent ; external)	
Operational ECO (External audit)	
Operational manager	

10. DRAFT STAFF / TENANT CONDUCT CONTROL AND INFORMATION SHEET

ALL STAFF MUST OBEY THE FOLLOWING RULES:	
1	**DO NOT** tamper with or destroy nesting sites, lairs or any other form of animal shelter.
2	**DO NOT** feed the native animals.
3	**DO NOT** leave the project site untidy and strewn with rubbish that will attract pests.
4	**DO NOT** bring any pets onto the construction site.
5	**DO NOT** trespass onto private properties not linked to the project.
6	**DO NOT** carry a weapon onto the project site or in the vehicles transporting workers to and from the site.
7	**DO NOT** set fires.
8	**DO NOT** cause any unnecessary disturbing noise
9	**DO NOT** drive a vehicle under the influence of alcohol.
10	**DO NOT** exceed the national speed limits on public roads or exceed the recommended speed limits in this management plan (where applicable)
11	**DO NOT** drive a vehicle that is generating excessive noise / leaking / excessive fuels (such vehicles must be reported and repaired as soon as possible).

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12	**DO NOT** litter along the roadsides, including both public and private roads.
13	**DO NOT** remove or destroy vegetation around the site without the prior consent of the Applicant and Environmental Control Officer.
14	**DO NOT** tamper with, destroy or remove vegetation from any areas that have been fenced off or marked.
17	**DO NOT** operate critical items of mechanical equipment without having been trained and certified.
18	**ALL** employees must undergo the necessary safety training and wear the necessary protective clothing at all times.
19	**NO** unsocial behaviour will be permitted e.g., excessive shouting, hooting etc.
20	**NO** ad-hoc activities are to be undertaken e.g. fires for cooking, the use of surrounding bush as a toilet facility is strictly forbidden
21	**NO** trespassing on private / commercial properties adjoining the site is forbidden.
22	**NO** worker may be forced to do work that is potentially dangerous or for what he / she is not trained to do.

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11. RESPONSIBILITIES

The "Responsibility" column is merely a guide and does not relieve the Applicant of his responsibilities in terms of overall compliance with the EA and EMPr.

FUNCTION	RESPONSIBILITY
Applicant / Holder of EA (if attained)	• The Applicant is ultimately responsible for the ensuring compliance with all the requirements associated with the construction, operation, rehabilitation and decommissioning phases of the project. • The Applicant is responsible to ensure that all necessary communication and submission of required documentation concerning this project is submitted to the relevant authorities.
Contractor / s / Subcontractor/s	• The Contractor is required to adhere to the EMPr and is responsible to ensure that all staff appointed also adhere the EMPr. • Ensures that all staff are made aware of the need to conduct activities in an environmentally responsible manner. • (Contractor) On instruction by the ECO, ensures that storm/surface water controls are established. • Ensures prompt remediation of any sewage spills. • Stockpiles are protected from aeolian effects, stormwater effects, or being driven over by workers. • Ensures that a "clean-site" policy is applicable at all times. • Ensures that all complaints by residents are dealt with promptly. • Is responsible for any contravention/s by staff or any non-compliance with the EMPr.
Site ECO	• On site ECO is required to carry out daily requirements of the EMPr • The sensitive vegetation, sensitive fauna and possibility of archaeological materials as well as ongoing waste, soil, and stormwater management requires an on-site ECO for this development
Environmental Control Officer (ECO)	• An external ECO is to have access to the site at all times, for the purpose of inspections to ensure that the environmental conditions of the EMPr as well as the conditions stipulated to in the EA and the recommendations made in the EIR are being implemented and adhered to. • The ECO to carry out monthly audits to ensure compliance with EMPR and EA (if attained) and submit the reports to project team and relevant authorities • The need for any deviations or variations in the environmental conditions must be reported to the DEDEAT for approval prior to these being undertaken. • The ECO must be fully cognisant with the contents of the Environmental Authorisation as well as this EMPr and any other applicable legislation
Competent Authority - DEADP	• The Compliance Officer appointed by the Competent Authority is responsible for the ensuring that the Applicant, Contractor, and ECO are compliant with the provisions of the EA and EMPr.
Cape Nature	• Responsible for issuing any SCC permits for fauna and smaller plants
Department of Forestry	• Responsibility for issuing permits for protected trees
Heritage WC	• Responsible for issuing of permits required for any discovered artefacts during excavation / site clearing activities

ACKNOWLEDGEMENT FORM

Record of signatures providing acknowledgment of being aware of and committed to complying with the contents of this Environmental Management Programme (EMPr), which relates to the environmental mitigation measures for the project outlined below, and the environmental conditions contained in all other contract documents.

PROJECT NAME:

Proposed mixed use / light industrial development on RE/ 139 Farm Zandhoogte, Mossel Bay Municipality, WESTERN CAPE

DEA&DP REF:

APPLICANT:

Signed: …….. Date: …….....

CONTRACTOR:

Signed: …….. Date: …….....

SITE ENVIRONMENTAL CONTROL OFFICER

Signed: …….. Date: …….....

EXTERNAL ENVIRONMENTAL CONTROL OFFICER

Signed: …….. Date: …….....