

**ENVIRONMENTAL MANAGEMENT PROGRAMME
FOR KNOR VARKIE CAMPING AND CARAVAN SITE
AND ASSOCIATED RESORT FACILITIES
ON
PORTION 8 OF FARM KLIPHOEK NR 59, VELDDRIF**

JANUARY 2026

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 ASSOCIATED RESORT FACILITIES ON
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Verification	Capacity	Name	Signature	Date
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COMMITMENT AND DECLARATION OF UNDERSTANDING BY PERSON IN CONTROL OF THE LAND AND RESPONSIBLE FOR IMPLEMENTING THE REQUIRMENTS OF THE EMP

I, the undersigned, as person in control of the land, have studied and understand the contents of this document. I undertake to adhere to the conditions as set out herein, unless specifically otherwise agreed to in writing.

Signed at on this Day of20.....

DEFINITIONS

Auditing:	A systematic and objective assessment of an organization's activities and services conducted and documented on a periodic basis based to a (e.g. ISO 19011:2003) standard.
Biodiversity:	The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.
Contractor:	An employer, as defined in section 1 of the Occupational Health and Safety Act 85 of 1993, who performs construction work and includes principal contractors
Environment:	A place where living, non-living and man-made features interact, and where life and diversity is sustained over time.
Evaporation:	The change by which any substance (e.g. water) is converted from a liquid state into and carried off as vapour.
Developer:	One who builds on land or alters the use of an existing building for some new purpose
Independent:	Is independent and has no interest in any business related to the development site, nor will receive any payment or benefit other than fair remuneration for the task undertaken
Groundwater:	Subsurface water in the zone in which permeable rocks, and often the overlying soil, are saturated under pressure equal to or greater than atmospheric.
Landowner:	Holder of the estate in land with considerable rights of ownership or, simply put, an owner of land
Monitoring:	A systematic and objective observation of an organisation's activities and services conducted and reported on regularly.
Natural vegetation:	All existing vegetation species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on a site.
Pollution:	The result of the release into air, water or soil from any process or of any substance, which is capable of causing harm to man or other living organisms supported by the environment.
Protected Plants:	Plant species officially listed under the Threatened or Protected Species regulations as well as on the Protected Plants List (each province has such a list), and which may not be removed or transported without a permit to do so from the relevant provincial authority.
Red Data Species:	Plant and animal species officially listed in the Red Data Lists as being rare, endangered or threatened.
Rehabilitation:	Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily re-establish the pre-disturbance condition, but does involve establishing geological and hydro logically stable landscapes that support the natural ecosystem mosaic.
Site:	Property or area where the proposed development took place

ACRONYMS

DEA&DP:	Department of Environmental Affairs and Development Planning
DWS:	Department of Water and Sanitation
ECO:	Environmental Control Officer
EA:	Environmental Authorisation
EIA:	Environmental Impact Assessment
EM:	Environmental Manager
EMP:	Environmental Management Programme
EO:	Environmental Officer
ER:	Engineer's Representative
MMP:	Maintenance Management Plan
I&AP:	Interested and Affected Party
IEM:	Integrated Environmental Management
PM:	Project Manager
SANS:	South African National Standards

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DEVELOPER'S COMMITMENT

Mrs Charlotte Visser (the applicant) has committed to a set of values that include the maintenance of good relations and transparent communications with all stakeholders, and the dynamic engagement of the larger community.

She undertakes to implement suitable management systems for all the areas and aspects of this operation. This will ensure that development itself and management of the project will comply with legal, technical, environmental and transformation policies and standards. She, in drafting this EMP for implementation, intends to enable continuous improvement in legal compliance and the sustainable operation of the site.

The EMP intends to change the way in which the developers, the construction process they have commissioned and the contractor plan for and manage resources to achieve sustainability. The satisfactory implementation of the EMP on site will require both the full support and commitment of all personnel.

CHAPTER 1

1.1. Executive Summary

This EMP has been prepared principally in compliance with the requirements of section 24N and Section 34 of the National Environmental Management Act 107 of 1998. This document, together with the conditions in the Environmental Authorisation, must be adhered to. The EMP must be included as part of all contract documentation for all contractors in the construction/maintenance and operational phase of the development.

The Author(s) and Enviro-EAP (Pty) Ltd ("Enviro-EAP")

Enviro-EAP is an independent consulting company and has no interest in any business related to the development site, nor will it receive any payment or benefit other than fair remuneration for the task undertaken, as required in terms of the NEMA Regulations.

This report has been prepared by Johmandie Pienaar, of Enviro-EAP, an environmental consultancy, engaged in providing professional services in the field of environmental planning, -systems, -auditing and -biodiversity assessment and -management.

Johmandie Pienaar holds a Baccalaureus Technologiae Degree (Cum Laude) in Nature Conservation from the Cape Peninsula University of Technology (2008).

She has completed the following short courses at the Centre for Environmental Management;

- Implementing Environmental Management Systems (ISO 14001)(2009);
- Occupational Health and Safety Law for Managers (2010);
- Implementing an OHS Management System based on OHSAS 18001 (2010)
- Occupational Health and Safety Management System OHSAS 18001 Audit:
A Lead Auditor Course Based on ISO 19011 and ISO 17021 (2011).

Johmandie has trained as an Environmental Assessment Practitioner since March 2009 and has been involved in the compilation, coordination and management of Basic Assessment Reports, Environmental Impact Assessments, Environmental Management Programmes, Waste Licence Applications, Water Use Licence Applications and Baseline Biodiversity Surveys for numerous clients.

Johmandie has also been involved in conducting environmental and occupational health and safety legal compliance audits for a number of clients.

The client has appointed Enviro-EAP to prepare an Environmental Management Programme that meets the technical standards as required by DEA&DP.

Refer to Addendum 1: Environmental Assessment Practitioner's CV and Declaration.

1.2. Background and Project Description

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act, 107 of 1998.

An informal camping and fishing site was established along the banks of the Berg River on Portion 2 (now Portion 8) of Farm Kliphoek No 59 near Velddrif since at least 1980 (expected to have been established even before then). From August 2019 Mr Gielie Visser (to be referred to as the applicant) rents the applicable property from the Swartjiesbaai Trust (landowner) and during September 2019 the applicant expanded the informal camping site to create a terraced cut and to fill an embankment area to accommodate additional camping and caravan sites. Since then, additional camping sites, ablution and recreational facilities, a restaurant/venue and parking areas have also been added to the facilities. The current Knor Varkie camp and caravan site with associated access road and facilities has a total footprint of ±0.9ha and consists of the following:

Existing resort area (0.9ha):

- Dwelling – 368m²
- Main Complex with storage, restaurant, bar, deck, parking, kitchen, office and ablution facilities – 2910m²
- Permanent and temporary Camping and Caravan Sites with wendies and ablution facilities, – 4057m²
- Historic Day Visitor Sites within the 1:100 year floodline area with 5 shading structures– 1762m²
- 1 x Floating Jetty

The following expansions are proposed (0.19ha):

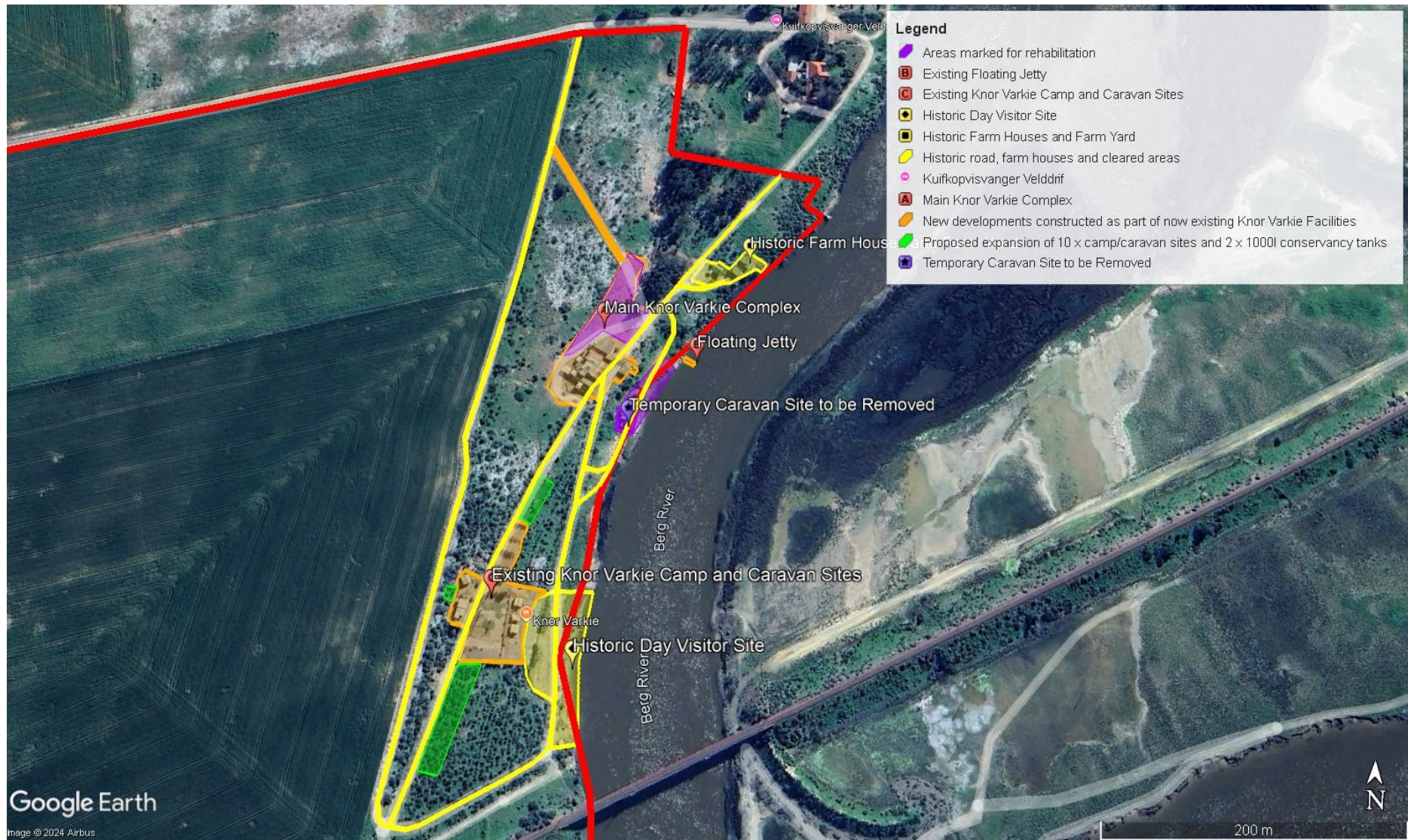
- 3 x Camping/Caravan Sites A - 491m²
- 7 x Camping/Caravan Site B – 1 347m²
- 2 x 1000l Additional conservancy tanks at camp site – 58m²

Planned rehabilitation areas:

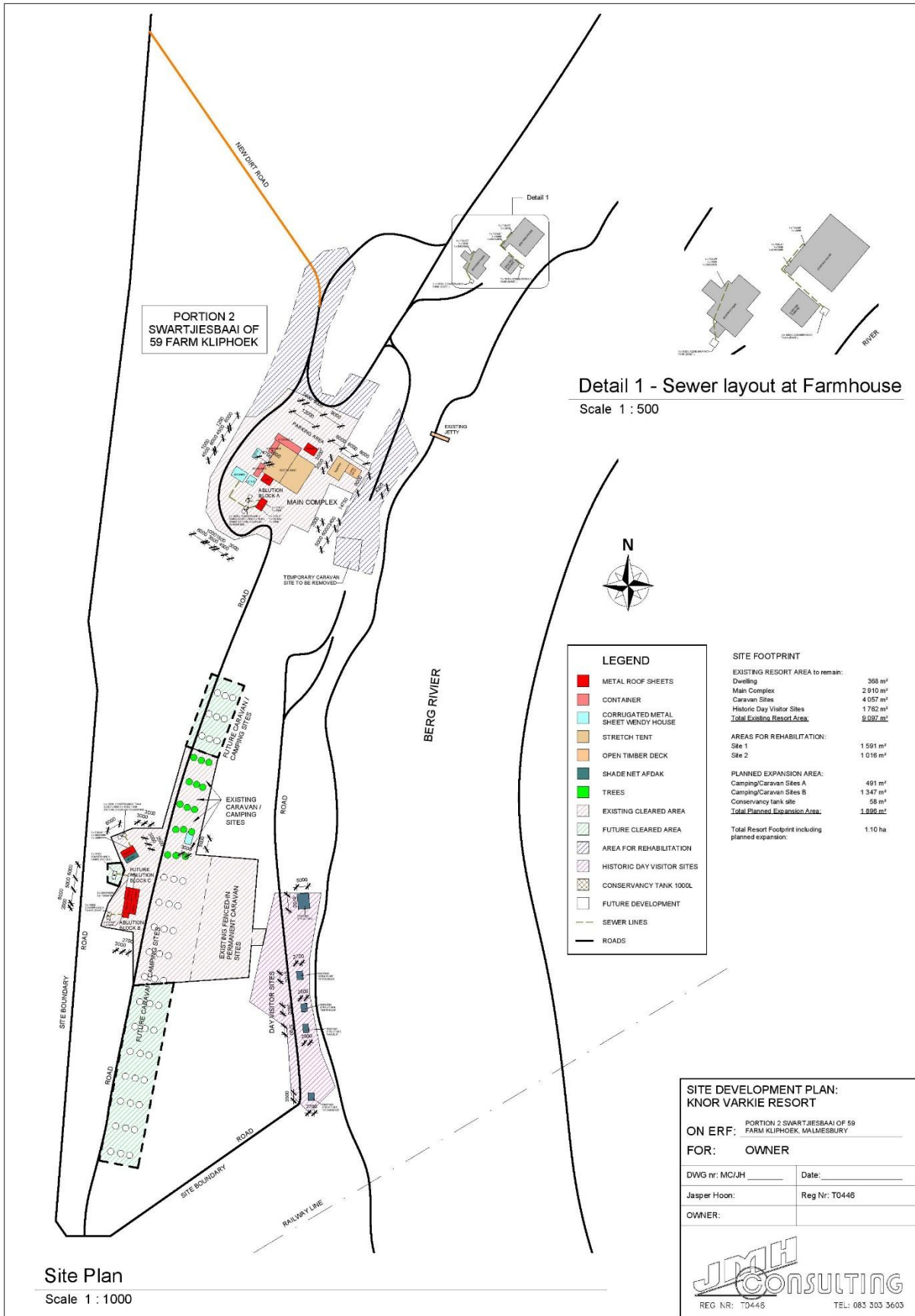
- Site 1 (cleared as part of main complex and new road developments) – 1591m²
- Site 2 (located within 1:100 year floodline area with temporary caravan to be removed) – 1016m²

The existing building structures as part of the Knor Varkie facilities are a combination of stretch tents, timber decks, shade net structures, containers, metal roof sheets and corrugated metal sheet wendy houses.

Most of the gravel roads used are part of the existing gravel farm roads except for one road which is a new 5m wide and ±165m long gravel road which was created to gain access to the Knor Varkie main complex.



Map 1: Google Earth layout map indicating developments and roads that existed historically (in yellow) and all the new developments and roads that was created from September 2019 to date as part of Knor Varkie Camp and Caravan site (in orange). Proposed rehabilitation areas in purple and proposed expansions in green.



Map 2: Knor Varkie Camping and Resort Facilities existing and proposed expansion layout.

CHAPTER 2

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

It deals with issues relating to the implementation of the EMP.

2.1 Organizational Structure

The organizational structure identifies and defines the responsibilities and authority of the various persons and organizations involved in the project. All instructions and official communications regarding environmental matters must follow the organizational structure.

The Environmental Official (internal EO), to whom the Engineer's Representative (ER) and/or external Environmental Control Officer (ECO) must report and interact, must be the responsible client representative.

The EMP must be an agenda item at the monthly site and operations meetings and the responsible client representative(s) must attend these meetings in order to provide input with respect to compliance with the EMP.

2.2 Responsibilities and Functions of the external Environmental Control Officer

The external ECO, with assistance from the internal Environmental Official, will be responsible for monitoring, reviewing and verifying compliance with the EMP and/or EA by all contractors and site management during site visits.

The external ECO and internal EO duties in this regard will include the following:

To ensure:

- all necessary environmental authorizations and permits have been obtained and are available and visible on site.
- monitor and verify that the EMP and/or EA is adhered to at all times and by taking action if the specifications are not followed;
- monitor and verify that environmental impacts are kept to a minimum;
- review and approve construction method statements;
- assist the contractor in finding environmentally responsible solutions to problems;
- report on the environmental issues at the site meetings and other meetings that may be called regarding environmental matters, if requested;
- inspect the site and surrounding areas regularly with regard to compliance with the EMP and/or EA;
- monitor the environmental awareness training for all personnel coming onto site;
- advise management on the removal of person(s) and/or equipment not complying with the specifications. Recommendations must be recorded by the EO in a Site Instruction Book;
- ensure that activities on site comply with known legislation of relevance to the environment;
- recommend the issuing of penalties via the developer for contraventions of the EMP and/or EA;
- keep a photographic record of progress on site from an environmental perspective; and
- undertake a continual internal review of the EMP and/or EA and submit a report to the developer and the responsible DEA&DP Environmental Official according to EA conditions.

2.3 Agreed Work Plan and Site Visit Schedule of External ECO

Due to construction activities of the development already being completed it is recommended that the external ECO conduct compliance monitoring every three months during the maintenance and operational phases of the development. Should additional construction be approved the external ECO must conduct monthly construction compliance monitoring until construction has been completed and thereafter three monthly external ECO compliance monitoring must continue.

Information recording activity on site, and any guidelines or instructions emanating from there will be routinely made available electronically to the developer and applicable contractors and a copy of the report must be available at the site office.

Clearly matters of urgency or immediate action may be channelled appropriately on an urgent basis.

2.4 Site Manager/Environmental Official On Site

The site manager/environmental official on site will have the following environmental control responsibilities:

- In conjunction with the ECO will present the environmental education programs to all persons employed on site.
- Consult with the ECO and any contractor to resolve all environmental issues.
- Issue any instructions from the ECO to the management team via a formal site instruction book or appropriate management tool used for the purpose.
- Take responsibility for the penalty system. The ECO and developer recommendations must be considered when deciding whether or not to impose a penalty.
- The site manager/environmental official will be accountable for the overall implementation of the Environmental Management Programme.
- Keep a site diary and complaints register.

2.5 Contractors

All contractors working on site will have the following responsibilities:

- Ensure that all staff is familiar with the Environmental Management Programme, which explains the environmental policy for the project.
- Allow for sufficient time between surveying the exact locations where services will be intended and actual construction, for the ECO to facilitate and instruct for the removal of plants, seeds and cuttings if necessary.
- The contractor must keep his personnel fully aware of environmental issues and ensure they show adequate consideration to all environmental aspects.
- Establish environmental signs to be erected on the construction site at locations identified by the ECO and approved by the engineer.
- Be responsible for the cost of the restoration of any damage caused, in environmentally sensitive areas, as a result of contractor responsibility regarding negligence. This must be done in accordance with the engineer / ECO's specifications.
- Take responsibility and active steps to avoid any increase in the fire hazard.
- The contractor must take responsibility for implementing all the relevant provisions of the EMP, or if he encounters difficulties with the specifications, he must discuss alternative approaches with the ECO and engineer prior to proceeding.

Failure to comply with the EMP may result in the application of fines as set out, and any reported non-compliance may result in the suspension of work or termination of a contract.

2.6 Record keeping of activities, inclusive of recording of non-compliances and corrective actions

The site manager/environmental official must keep a record of all activities relating to environmental matters on site, including:

- meetings attended;
- method statements received and approved;
- issues arising on site;
- cases of non-compliance with the EMP;
- corrective actions taken and penalties issued.

This information will be recorded in an appropriate manner in a site diary, registers, issues/warning book, etc.

2.7 Compliance with other legislation

It is important that all on site staff are aware of other relevant legislation that may relate to the activities taking place on site, especially local authority required compliances.

CHAPTER 3

Applicable Legislation, Policy and Environmental Principles

Take Note: the list below is by no means a comprehensive list, but a list of relevant applicable Acts. It does not identify the specific applicable sections and regulations. The Developer is ultimately responsible to identify and ensure that compliance with all relevant legislation, policies etc. is taking place on site at all times

3.1 Applicable Legislation Identified

1. ADVERTISING ON ROADS AND RIBBON DEVELOPMENT ACT, 21 OF 1940
2. BASIC CONDITIONS OF EMPLOYMENT ACT, 75 OF 1997
3. CAPE WINELANDS DISTRICT MUNICIPALITY: FIRE SAFETY BY-LAW
4. COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 130 OF 1993
5. CONSERVATION OF AGRICULTURAL RESOURCES ACT, 43 OF 1983
6. CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996
7. ENVIRONMENT CONSERVATION ACT, 73 OF 1989, WESTERN CAPE NOISE CONTROL REGULATIONS
8. EMPLOYMENT EQUITY ACT, 55 OF 1998
9. ENVIRONMENT CONSERVATION ACT, 73 OF 1989
10. FENCING ACT, 31 OF 1963
11. HAZARDOUS SUBSTANCES ACT, 15 OF 1973
12. LABOUR RELATIONS ACT, 66 OF 1995
13. BERG RIVER LOCAL MUNICIPALITY AIR POLLUTION CONTROL BY-LAW, 2014
14. BERG RIVER LOCAL MUNICIPALITY ELECTRICITY SUPPLY BY-LAW, 2015
15. BERG RIVER LOCAL MUNICIPALITY MANAGEMENT AND USE OF RIVERS BY-LAW, 2013
16. BERG RIVER LOCAL MUNICIPALITY MUNICIPAL LAND USE PLANNING BY-LAW, 2015
17. BERG RIVER LOCAL MUNICIPALITY MUNICIPAL ROADS BY-LAW, TRAFFIC AND PARKING BY-LAW, 2015
18. BERG RIVER LOCAL MUNICIPALITY OUTDOOR ADVERTISING AND SIGNAGE BY-LAW, 2016
19. BERG RIVER LOCAL MUNICIPALITY PREVENTION OF PUBLIC NUISANCES AND CONTROL OVER THE KEEPING OF ANIMALS BY-LAW, 2018
20. BERG RIVER LOCAL MUNICIPALITY PUBLIC AMENITIES BY-LAW, 2016
21. BERG RIVER LOCAL MUNICIPALITY REFUSE REMOVAL BY-LAW, REFUSE DUMPS AND SOLID WASTE DISPOSAL BY-LAW, 2015
22. BERG RIVER LOCAL MUNICIPALITY STORM WATER MANAGEMENT BY-LAW, 2015
23. BERG RIVER LOCAL MUNICIPALITY WATER AND SANITATION SERVICES AND INDUSTRIAL EFFLUENT BY-LAW, 2015
24. WEST COAST DISTRICT MUNICIPALITY AIR QUALITY MANAGEMENT BY-LAW, 2015
25. WEST COAST DISTRICT MUNICIPALITY MUNICIPAL HEALTH BY-LAW, 2015
26. NATIONAL HEALTH ACT 61 OF 2003
27. NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT, 103 OF 1977
28. NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 107 OF 1998
29. NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 39 OF 2004
30. NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 10 OF 2004
31. NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 59 OF 2008
32. NATIONAL FORESTS ACT, 84 OF 1998
33. NATIONAL HERITAGE RESOURCES ACT, 25 OF 1999
34. NATIONAL VELD AND FOREST FIRE ACT, 101 OF 1998
35. NATIONAL WATER ACT, 36 OF 1998
36. OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993
37. TOBACCO PRODUCTS CONTROL ACT, 83 OF 1993
38. WATER SERVICES ACT, 108 OF 1997

CHAPTER 4

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act, 107 of 1998.

Compliance

4.1 Monitoring and Auditing

4.1.1 Introduction

In keeping with current environmental and associated legislation, all environmental management procedures and actions must be reviewed and refined on an ongoing basis.

This is in accordance with the dynamic nature of environmental management and allows for the timeous identification and mitigation of issues as they come to light.

The process of review and refinement, built into the requirements of the EMP, is known as monitoring and auditing.

4.1.2. Roles and responsibilities

Efficient implementation of the performance specifications, effective monitoring and auditing, as well as clear responsibility and accountability allocation requires that various role-players be defined for the construction implementation project.

Depending on the nature and scale of a project, implementing teams could be composed of any number of role-players, each with their own specified responsibilities.

Therefore, for the purpose of this document, the following role-players are defined, based purely on responsibility and accountability allocation. The actual designation of role-players may vary, but the responsibilities will largely remain as stated.

4.1.2.1. Developer/landowner or custodian of the land including its appointed Site Manager/Environmental Official

The developer/landowner or custodian of the land is the person or organization with decision making capacity for the land in question, and thus ultimately accountable for what takes place on that land.

4.1.2.2. Contractor

Contractors are appointed to undertake the works as specified in the contract. It is the responsibility of the contractor to do whatever is necessary from their side to ensure that he or an appointed advisor is well versed in environmental studies, so that they may accurately and efficiently carry out the requirements of the environmental specification.

The contractor is liable for any and all remedial work required in terms of the environmental specification, resulting from his environmental negligence, mismanagement and / or non-compliance.

4.1.2.3. Environmental Control Officer

An environmental control officer will manage and undertake three monthly environmental inspections for the duration resort operations.

The site manager are answerable to the ECO for non-compliance. Issues of non-compliance raised by the ECO must be taken up by the site manager and resolved as per the conditions of his contract.

Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation and not allowed for in the performance specification) must be endorsed by the site manager.

4.2 The Monitoring Procedure

Environmental monitoring is the continuous evaluation of the status and condition of environmental elements. Its purpose is to detect change that takes place in the environment over time and involves the measuring and recording of physical, social and economic variables associated with development impacts.

Many techniques for environmental monitoring have been proposed, each detailing a specific protocol. Regardless of which technique is used, the ultimate aim is that each environmental management specification be checked by means of a system in which a score may be allocated for:

- Full compliance;
- Satisfactory performance;
- Unsatisfactory performance; and
- No action taken.

Completed monitoring reports will be submitted to the site manager, who will attend to issues. These reports must be kept on file and be made available upon request by any environmental authority requesting such.

All persons employed by the site manager must abide by the requirements of these performance specifications as they apply to the works. Any employees, the contractor or his sub-contractors found to be in breach of any of the environmental specifications, may be ordered to vacate the site forthwith and/or be subject to a disciplinary process.

The order may be given orally or in writing by the ECO. Confirmation of an oral order will be given as soon as practicable, but lack of confirmation in writing must not be a cause for the offender to remain on site, or not be subject to a disciplinary process. Supervisory staff, the contractor or his sub-contractor may not direct any person to undertake any activities which would place such person in contravention of the EMP, legislation and specifications.

The site manager is deemed not to have complied with the performance specifications if:

- There is evidence of wilful or accidental contravention of any specification included in the specification;
- There is evidence of the contractor carrying out activities not permitted in terms of the EMP, contract and / or the specification;
- There is evidence of environmental negligence and / or mismanagement resulting in negative impacts on the environment;
- Has failed to meet with the requirements of the approved schedule.

The site manager will be informed via ECO three monthly reports, as well as by means of direct instruction (if necessary) as to what corrective actions are required in terms of environmental compliance.

Disregard for an instruction, and failure to respond adequately to complaints from the public will be construed as non-compliance. Non-compliance may lead to parties being penalised.

In more serious cases, the ECO may give notice, and halt operations until such a time that the corrective action is taken and the site complies with the performance specifications.

4.3 The Auditing Procedure

Environmental auditing is the process of comparing the impacts predicted with those which have actually occurred during implementation.

An environmental performance audit examines and assesses practices and procedures which, in the event of failure, would cause an environmental impact or result in an environmental risk. During each of the lifecycle phases, various issues will be monitored. The performance audit will ensure that the monitoring was correctly undertaken and that compliance was best achieved.

To these ends the project will be audited versus this EMP for effectiveness. ISO/SANS 19011:2011 auditing standards will be applied.

Audits will be undertaken annually. Audit reports will be submitted to management, who will attend to all noted issues. Annual audit reports will also be submitted to the Department.

4.4 Retentions and Penalties

It is recommended that a penalty retention system be combined with the penalty system to both motivate and compel the contractor to adhere to the EMP for the duration of the contract.

In this way incentives may be created to perform (i.e. in the form of the retention amounts that will only be paid to the contractor at the end of the contract), without creating the misunderstanding that adherence to the EMP is optional.

Persistent non-compliance will not only result in the contractor forfeiting any retention amount, but he will also be fined.

Of importance is that the contract specifies exactly how the penalty and retention system will operate, as well as how any funds resultant from retentions and penalties will be utilised.

All such funds must be used to improve environmental conditions on the site in general.

4.4.1. The Retention System

For this system, a percentage value for each of the sections priced for in the environmental bill of quantities is retained until the full completion of the contract works.

If the monitoring process reveals persistent and/or wilful non-compliance with any aspect of the environmental performance specifications, then the full retention associated with that particular item will be withheld.

The project may then apply these retained funds to rectify the problem on site possibly making use of other or alternate resources at his disposal.

At the end of the contract or action, all remaining environmental retention amounts will be paid out to the contractor or staff pending approval by the ECO, after having confirmed full compliance with the relevant performance and rehabilitation specifications.

4.4.2. Penalty System

A system of penalties will be introduced to reinforce environmentally sensitive and prudent behaviour. The maximum penalties that will be fined per incident that may be enforced are listed below. The penalty amount will be determined (inter alia) by the severity of the offence.

Any defacing or cutting down trees, existing infrastructure, not specified to be removed	R5000 each
Disturbance to natural veld and wetlands outside of approved development area	R1000 / m ²
Catching or harming wild animals	R3000 plus charges at SAPS
Litter resulting from operation	R250 / offence / day
Making a fire outside an approved fireplace	R20 000
Disposal of any litter or waste material in a no-go or non-specified area	R1000 / m ²
Dumping of cement, concrete, fuel or oil in an area or other than that authorised and suitable	R10 000
Any damage to plant life in a no-go area	R1000
Failure to use portable / toilets	R100 / observed incident or evidence of human excrement in the veld
Waste of water resources	R1000/day
Any actions contrary to the EMP requirements which continue after an initial penalty	Notification of the Department who will take further actions as/if required.

In addition to the above, all costs incurred by the client / developer to remedy any damage will be the responsibility of the offender.

4.5 Method Statements

Upon request from the ECO the site manager must provide written statements for discussion with the ECO on environmentally sensitive aspects to be implemented. Environmentally sensitive aspects

include by example excavations, work close to sensitive areas, collection and storage of top soil and vegetation, erosion control, wash water control, waste control, etc.

Methods Statement (MS) Content

It is important to note that the ECO may request further methods specification, if it be deemed necessary in his view.

Examples of standard Methods Statement which may be requested by the ECO:

- MS to specify the fire drill procedure to be followed in the event of a fire.
- MS to state how pollution will be prevented from entering any environmental system. To include the methods of filtering out pollution such as oil, petrol and waste from any working areas or roads.
- MS to specify special measures that will be needed in the event of large pollution spills.
- MS to indicate the timing and sequence of events to follow in sensitive areas to give sufficient time for the ECO to survey these areas and remove plants.
- MS on how recommended no-go/no-development areas will be demarcated and remain demarcated throughout construction phase.
- MS on water saving management plan that will be implemented during construction.

The Method Statement must include a site plan, preparatory steps, materials, and supervision details.

METHOD STATEMENT

CONTRACT:..... **DATE:**.....

PROPOSED ACTIVITY (give title of method statement and reference number from the EMP):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:

End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated maps and plans where possible):

Note: please attach extra pages if more space is required

DECLARATIONS

7) ENVIRONMENTAL SITE OFFICER/ ENGINEERS REPRESENTATIVE [select correct term]

The work described in this method statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

(signed)

(print name)

Dated: _____

2) PERSON UNDERTAKING THE WORKS

I understand the contents of this method statement and the scope of the works required of me. I further understand that this method statement may be amended on application to other signatories and that the ECO / EO and ER will audit my compliance with the contents of this method statement

(signed)

(print name)

Dated: _____

3) APPROVING AUTHORITY (Engineer)

The works described in this method statement are approved.

(signed)

(print name)

(designation)

Dated: _____

CHAPTER 5

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

5.1. Good Housekeeping

The developer/landowner will ensure the maintenance of “good housekeeping” practices during operations.

This will help avoid several disputes regarding responsibility and will allow for the smooth running of the operation as a whole.

Good housekeeping extends beyond the environmentally sensitive construction methods to include the care for and preservation of the surrounding environment.

5.2 Record Keeping

The developer/landowner will ensure that a filing system, identifying all documentation related to the EMP, is established.

A list of reports likely to be generated during the project is set out below.

All applicable documentation must be included in the environmental filing system catalogue or document retrieval index.

- Approved EMP, authorizations, licenses or permits;
- Final design documents and diagrams issued;
- All communications detailing changes of design/scope that may have environmental implications;
- Daily, weekly and monthly site monitoring reports;
- Complaints register;
- Environmental training manual;
- Environmental training attendance registers;
- Incident and accident reports;
- Emergency preparedness and response plans;
- Copies of all relevant environmental legislation;
- Permits and legal documents as part of emergency preparedness teams e.g. fire teams, etc.;
- Material data sheets of all chemicals utilised on site;
- Crisis communication manual;
- Disciplinary procedures;
- Monthly site meeting minutes during construction;
- All relevant permits;
- All method statements for all phases of the project.

All registers and records should be kept on site and must be made available to the department on request.

5.3 Document Control

The developer/landowner will be responsible for establishing a procedure for document control.

The document control procedure must comply with the following requirements:

Documents must be identifiable by organisation, division, function, activity and contact person;

Every document must identify the person and their positions, responsible for drafting and compiling the document, for reviewing and recommending approval, and final approval of the document for distribution;

All documents must be dated, provided with a version number and reference number, filed systematically, and retained for a specified period.

The owner will ensure that documents are periodically reviewed and revised where necessary, and that current versions are available at all locations where operations essential to the functioning of the EMP are performed. All documents will be made available to the external auditor.

5.4 Reporting Requirements

All advice and recommendations made by the ECO must with the project engineer/engineers compliance be recorded on site in the site instruction book/ suitable register for his attention.

All spills will need to be documented and reported to DWS and other relevant authorities.

CHAPTER 6

6.1. Public Communication Protocols

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act, 107 of 1998.

The developer/landowner must be responsible for regulating public access to information and compliance reporting.

The developer/landowner must respond to third party or public queries and complaints.

The developer/landowner must also be responsible for maintaining the compliance register to record complaints received and action taken. All complaints receive by the facility must be documented.

CHAPTER 7

This section of the report is included in compliance with Section 24 N 2 (d - g) and 3 (a - b) of the National Environmental Management Act, 107 of 1998.

SPECIALIST REQUIREMENTS

Estuarine Impact Assessment for Knor Varkie Resort Development on Farm Kliphoek 8/59, Berg River Estuary as done by Anchor Environmental Consultants February 2024

Conclusions and Recommendations

Impacts pertaining to the Section 24G are summarised above, with their significance rating before and after the implementation of mitigation measures (Table 5.16). Without mitigation, the significance of the five impacts pertaining to the Section 24G ranges from 'Medium' to 'High'. It is therefore essential that mitigation measures are implemented to reduce the significance of the developments which have already taken place, in order to reduce the negative effects on the sensitive estuarine environment. The applicant is also advised to adhere to all relevant legislation and procedures going forward.

Additionally, potential impacts that may be experienced during construction and operational phases of the proposed development, both before and after mitigation, are summarised in Table 1.1 below. A total of eight negative potential environmental impacts were assessed including further loss of estuarine habitat, pollution emanating from the use of the facilities and the increased human activity. After mitigation, none of the identified impacts were assessed as being above 'Low' significance.

The primary cumulative impacts for this development are related to loss of and disturbance to estuarine habitat and cumulative effects of increased human activity due to the development of the Resort. The cumulative impacts are expected to be of slightly higher intensity than those assessed for the construction phase but are assessed as low significance with the implementation of suitable mitigation measures (Table 5.16).

Based on the impacts assessed in this report, it is recommended that the already completed developments identified during the Section 24G Assessment be allowed to remain if:

- The areas designated in the updated site plan are rehabilitated according to a plan devised by a qualified individual, especially the salt marsh area where the temporary caravan site is currently situated.
- All invasive species must be removed, and an alien and invasive species programme must be implemented.
- A zero tolerance to litter policy is implemented on the property.
- Sewage systems are properly implemented and maintained so that no sewage enters the estuary.
- Noise levels remain within those allowed within rural areas.
- Visitors are informed of the sensitivity and importance of the estuarine habitat and biota present in the area.
- The Environmental Management Plan (Pienaar, 2023a) is implemented.
- It is recommended that additional areas composed of salt bush be rehabilitated with indigenous vegetation to improve ecosystem functioning.
- The applicant is also advised to adhere to all relevant legislation and procedures going forward.

Additionally, based on the impacts assessed in this report, it is recommended that the proposed future development be permitted to proceed with the implementation of strict environmentally responsible practices as outlined in the mitigation measures below. However, it is strongly recommended that no additional jetty be built given the presence of *Zostera capensis* beds within the estuary.

Essential Mitigation measures required to reduce the severity of the impacts during the construction/operational phase as outlined above are as follows:

- The Environmental Management Plan (Pienaar, 2023a) is implemented.
- A rehabilitation plan must be devised by qualified personnel and implemented to restore and improve saltmarsh habitats and other estuarine vegetation in the vicinity of the proposed development.
- Alien species must be removed.
- Limit the extent and duration of construction activities within the Estuarine Functional Zone as far as practically possible.
- Areas of bare ground resulting from the proposed construction activities should be appropriately revegetated or appropriately covered to prevent erosion and turbidity within the EFZ.
- Erosion control measures in areas at risk of erosion/runoff must be implemented.
- All staff and visitors must be informed about sensitive estuarine habitats and species and the responsible disposal of waste.
- A zero tolerance to litter policy is implemented on the property.
- Reduce, reuse, recycle.
- Sewage systems are properly implemented and maintained so that no sewage enters the estuary.
- Noise levels remain within those allowed within rural areas.
- Suitable handling and disposal protocols must be clearly explained, and sign boarded.
- Intentional disposal of any substance into the environment is strictly prohibited, while accidental spillage must be prevented, contained and reported immediately.
- All fuel and oil must be stored with adequate spill protection, and no leaking equipment or vehicles are permitted on site.
- All hazardous substances must be accompanied by a permit, a hazard report sheet, and a first aid treatment protocol and may only be handled by suitably trained operators.
- Spill kits must be available on site at all times, and staff must be trained in their use.

Additionally, it is important that the conditions within the system be monitored to enable adaptive management. If conditions become detrimental to the ecosystem, the impacts of construction and/or operation will need to be reassessed and adjusted mitigation measures applied. To this end, it is recommended that an Environmental Control Officer be employed of the duration of the construction phase and perhaps include an annual site visit for two years after the construction is completed.

Environmental Noise Impact Report for Knorvarkie Campsite Located on the R234 Hopefield Road, Velddrif

Conclusion and Recommendations

The survey indicates that the overall daytime and night-time noise environment at and around Knorvarkie is influenced by a mix of rural and human activity sources. On an average basis, the measured levels at the nearest off-site receptors were generally within the IFC guideline levels for

residential receptors, with occasional short-lived exceedances largely linked to cargo-train pass-bys rather than Knorvarkie’s routine operations.

Despite this general compliance against the IFC guideline levels, the absolute ambient sound climate in the area is higher than would typically be expected in a quiet rural setting. This is because the local acoustic environment is shaped by multiple contributors, including natural sounds (wind in vegetation, insects, birds), farming and gardening activities (tractors, irrigation pumps, lawnmowers), intermittent transport-related noise (farm equipment and occasional vehicles), and periodic cargo trains. Knorvarkie also contributes to the sound climate through the River Shack restaurant (particularly music, at times with noticeable bass), and through activity associated with guest accommodation (raised voices and music), with some noise also originating from neighbouring properties.

In terms of Knorvarkie-specific impact, the busy-versus-quiet comparisons indicate that Knorvarkie’s operations can produce a measurable increase in noise levels at neighbouring receptors during busy daytime conditions, and that there is a distinct possibility of “disturbing noise” at the nearest neighbouring residence, i.e., an increase of a magnitude that may meet or exceed the WCNCR disturbance threshold under certain operating conditions (particularly where music and patron activity elevate the residual sound environment). No campsite activity was observed during the survey; however, it is recognised that campsite use would represent an additional potential source of noise (voices, music and vehicle movements), particularly during evenings and weekends.

Given the presence of noise complaints, the audibility of music at off-site receptors during busy conditions, and the potential for disturbing noise as defined by the WCNCR, it is concluded that **a Noise Management Plan is required**. The following section therefore sets out practical management measures aimed at reducing off-site audibility (especially music and guest related noise), managing operating practices during sensitive periods, and providing a clear framework for responding to and resolving future noise complaints.

The Noise Management Plan has been included as Addendum 3 of the EMP for implementation.

GOALS FOR PLANNING AND DESIGN PHASE

This section of the report is included in compliance with Section 24 N 2 (d – g) and 3 (a – b) of the National Environmental Management Act, 107 of 1998.

Overall Goal for Planning and Design: Undertake the planning and design phase of the development in a way that:

- Ensures that the design of the residential development responds to the identified environmental constraints and opportunities.
- Ensures that pre-construction activities are undertaken in accordance with all relevant legislative requirements.
- Ensures that adequate regard has been taken of any landowner concerns and that these are appropriately addressed through design and planning (where appropriate).
- Ensures that the best environmental options are selected for the project.
- Enables the residential development construction activities to be undertaken without significant disruption to other land uses in the area.
- In order to meet this goal, the following objectives have been identified, together with necessary actions and monitoring requirements.

OBJECTIVE PD1: ENSURE THE DESIGN OF THE DEVELOPMENT RESPONDS TO THE IDENTIFIED ENVIRONMENTAL CONSTRAINTS AND OPPORTUNITIES

Access roads and construction camp areas should be placed on existing roads and disturbed areas as far as possible so as to minimise the impacted area and construction sites should be clearly demarcated and no additional areas outside of the approved development footprint areas may be impacted upon.

Project Component/s	Access roads Construction area Development Layout
Potential Impact	Design fails to respond optimally to the environmental consideration.
Activities/Risk	Poor consideration of the natural landscape features.

Sources		
Mitigation: Target/Objective	Ensure that the design of the developments responds to the identified environmental constraints and opportunities.	
Mitigation: Action/Control	Responsibility	Timeframe
Development areas to be demarcated must be as according to the approved layout which is located on the existing and most disturbed areas on the property.	Developer Town planner Engineer EAP	Design Phase
The developer together with the inputs of the engineer, EAP and town planner must determine which technological alternatives will suit the proposed development site the best and which are reasonable and feasible to implement, also taking into account funding available for the development. Some of these technological alternatives to be considered for the proposed development include: <ul style="list-style-type: none"> • Type of construction materials used. • Reduce hard surfacing as far as possible to encourage rain water to seep back into the ground rather than being carried away into the drainage systems. • Designed paved areas so that water run-off is slowed down and where possible used soak away and permeable paving that allows water to filter into the ground. • Aim for and promote zero waste in planning, operation, management, maintenance and demolition of the structures. I.e. build waste avoidance into the process at a design phase, by specifying products and materials that have less wasteful production processes and don't create wasteful emissions during construction, maintenance and demolition of a structure. 	Developer Town planner Engineer EAP	Design Phase
Access roads to be carefully planned along existing access roads to minimise the impacted area and prevent unnecessary over compaction of soil.	Developer Town planner Engineer EAP Contractor	Design phase
As far as possible new roads must link with existing roads infrastructure.	Developer Town planner Engineer EAP Contractor	Design phase
The holder of an environmental authorisation has the responsibility to notify the competent authority of any alienation, transfer and, change of ownership rights in the property on which the activity is to take place.	Developer	Pre-construction
Fourteen (14) days written notice must be given to the Department that the activity will commence. The notification must include a date on which the activity will commence as well as the reference number.	Developer	Pre-construction
ECO to be appointed prior to the commencement of any authorised activities. Once appointed the name and contact details of the ECO must be submitted to the DEA&DP.	Developer	Pre-construction
All safety requirements for the construction and operation of proposed infrastructure must be factored in during the planning phase i.e. traffic management.	Developer	Pre-construction
Performance indicator	Design meets objectives and does not degrade the environment. Minimal impact on the surrounding environment	
Monitoring	Ensure that the design implemented meets the objectives and mitigation measures in the EMP through review of the design	

	by the EAP, Project Manager, Developer and the Contractor prior to the commencement of construction.
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OBJECTIVE PD2: ENSURE EFFECTIVE COMMUNICATION MECHANISMS WITH THE VARIOUS STAKEHOLDERS

On-going communication with affected and surrounding landowners and key departments is important to maintain during the construction and operational phases of the developments. Any issues and concerns raised should be addressed as far as possible in as short a timeframe as possible.

Project Component/s	Communication protocols		
Potential Impact	Communication failure that can lead to a number of detrimental impacts such as failure to comply with EMP requirements due to not receiving correct or any instructions.		
Activities/Risk Sources	Communication between all relevant parties		
Mitigation: Target/Objective	Effective communication with all relevant parties Addressing of any issues and concerns raised as far as possible in as short a timeframe as possible.		
Mitigation: Action/Control	Responsibility	Timeframe	
Compile and implement a grievance mechanism procedure for the public to be implemented during both the construction and operational phases of the facility. This procedure should include details of the contact person who will be receiving issues raised by interested and affected parties, and the process that will be followed to address issues.	Developer Contractor	Pre-construction Construction phase Operational phase	
Discuss and agree upon communication protocols during pre-construction site meeting	Contractor Developer ECO	Pre-construction Construction phase	
Performance indicator	A public complaint register is available at the site office and public complaints recorded in the register and dealt with swiftly. Pre-construction meeting minutes indicates communication protocols were discussed and agreed upon.		
Monitoring	A complaint or finding must be recorded, addressed and monitored by the ECO as according to the requirements of the EMP.		

OBJECTIVE PD3: PRE-CONDITIONS

The following pre-conditions shall be fully met before any construction activities may commence:

- ECO to be appointed prior to the commencement of any authorised activities. Once appointed the name and contact details of the ECO must be submitted to the DEA&DP.
- Transnet owns a portion of Farm Kliphoek 2/59 by expropriation and a portion of the Knor Varkie Camp and Resort Facilities is encroaching on this land. Lease Agreement with Transnet must be maintained.
- A lease agreement must be obtained with CapeNature for the existing jetty in the estuary under the Sea-Shore Act of 1935. CapeNature only considers Sea-Shore lease agreements if the jetty is part of an environmental authorisation.
- Rehabilitation plan for both the estuarine vegetation components and terrestrial vegetation components need to be compiled by an ecological restoration specialist and estuarine specialist, guiding on methodology and implementation of rehabilitation including monitoring, adaptive management, and legislative permit requirements for aspects of rehabilitation such as obtaining seed, among others.
- Plan and conduct pre-construction activities in an environmentally acceptable manner
- Fourteen (14) days written notice must be given to the Department that the activity will commence. The notification must include a date on which the activity will commence as well as the reference number.
- Compile and implement a dust monitoring programme before the commencement of construction activities on site. The dust monitoring programme must be compiled in accordance with the National Environmental Management: Air Quality Act, 2004 (Act No 39 of 2004) National Dust Control Regulations, 2013 - subregulation (5) for implementation during construction activities. If the dust monitoring results indicates that dustfall standards as set out

in regulation 3 is exceeded a dust management plan must be compiled and submitted to the relevant air quality officer for approval. As according to the regulations this dust management plan must then be implemented within a month of the date of approval received from the air quality officer. An implementation progress report must be submitted to the air quality officer at agreed time intervals.

- Appointed construction company must identify the nearest approved municipal or private green waste facility. All green waste i.e. plant materials produced during site clearance not re-used or recycled on site must be disposed of at the approved municipal or private green waste facility and proof of such disposal must be kept and be available upon request.
- The appointed construction contractor must be aware of the requirements of the EA, EMP and all other related documents and sign the commitment declaration as proof thereof. Signed copy of the declaration must be available upon request.
- Search and rescue of any animals i.e. tortoises as well as any indigenous plants that can be successfully relocated must be conducted before site clearance commences under the supervision of the ECO.

A site meeting between the contractors, representatives of the developer and the ECO must take place at least 5 days prior to commencement of construction work to:

- Demarcate micro construction sites, services routes, access routes, working boundaries and no-go areas. Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase;
- Search and rescue of any animals i.e. tortoises as well as any indigenous plants that can be successfully relocated must be conducted before site clearance commences under the supervision of the ECO.
- Discuss methods of stockpiling (vegetation, topsoil, sub-soil, shell-grit, etc.);
- Check required toilets and fire-fighting facilities to be in place;
- Discuss and agree restricted access to construction site and location of construction camp;
- Sign the Declaration of Understanding (Contractors);
- Discuss and agree communication channels/protocols including contact details;
- Discuss and agree areas of responsibility;
- Discuss and agree the demarcation and control of construction and building sites.
- Conduct flora and fauna search and rescue if required
- Discuss and implement adherence to site specific specialist recommendations
- Discuss and agree on site specific method statements to be submitted by the contractor to the ECO for approval before commencement

Minutes of this site meeting must be kept, and are to be distributed to all parties.

The following equipment must be readily available on site before any construction work is due to start:

- Sufficient and suitable chemical toilet facilities.
- Sufficient refuse bins, which are weather and wind proof, with proper lids.
- 1 x type ABC (all purpose) 12.5 kg fire extinguisher

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted:

- to the site manager during the pre-construction ECO site visit.
- to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted)
- to the DEA&DP and site manager as part of the annual compliance report during the construction phase
- to the DEA&DP and site manager at the completion of the construction phase

OBJECTIVE PD4: LAYOUT PLAN CONTROLS

The site manager must ensure that a copy of the signed approved layout plan is available at the office on site at all times for inspection by the developer or his representative(s). Any variation to the approved layout plan must be submitted to the Department for signed approval and may only be implemented once the approved variation is available to the contractor and available on site at the office. The variation of changes to the layout must be approved by the competent authority as per the EA conditions before implementation.

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports.

OBJECTIVE PD5: ADVERTISING

The site manager may place no advertising material on the property unless prior formal written permission has been obtained from the Department and local authority.

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports.

**CONSTRUCTION PHASE
(ALSO APPLICABLE FOR ALL MAINTENANCE ACTIVITIES TO BE IMPLEMENTED DURING THE OPERATIONAL PHASE)**

Goal for Construction Phase

Overall Goal for Construction (C):

Undertake the construction of the development infrastructure in a way that:

- Ensures that construction activities are properly managed in respect of environmental aspects and impacts;
- Enables construction activities to be undertaken without significant disruption to other land uses in the area, in particular concerning noise impacts, dust, farming practices, traffic and road use, and effects on local residents;
- Minimises the impact on the surrounding area;
- Minimises impacts on avifauna and other fauna using the site; and
- Minimises the impact on the heritage and historical value of the site
- Minimise possible health impacts.

Objectives

In order to meet this goal, the following objectives have been identified, together with the necessary actions and monitoring requirements.

OBJECTIVE C1: WORKING HOURS

Civil & Construction Sites	
Mondays to Fridays	06h00 – 19h00
Saturdays & Public Holidays	06h00 – 17h00

Project Component/s	Development site; Access roads.
Potential Impact	Surrounding landowners/occupiers and residents are exposed to noise generated from the development site.
Activities/Risk Sources	Activities associated with facility construction that creates disturbing noises.
Mitigation: Target/Objective	Effective communication with affected and surrounding landowners/occupiers; Addressing of any issues and concerns raised as far as possible in as short a timeframe as possible.

Mitigation: Action/Control	Responsibility	Timeframe
Contractors may only be present on the site during the working time hours.	Developer and contractor.	Construction phase.

Performance indicator	Effective communication and procedures in place.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.

OBJECTIVE C2: SECURITY, SAFETY AND EMERGENCIES

Project Component/s	Construction site Access roads Adjacent residential areas
Potential Impact	Safety of the public, surrounding landowners and residents

	Safety of personnel working on site Safety of visitors on site		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect all involved from incidents and injury		
Mitigation: Action/Control	Responsibility	Timeframe	
Access to the construction sites must be controlled. Notices should be displayed at all public entrances to the property, warning visitors that they are entering a construction site and that all visitors must report to the site office.	Contractor	Construction phase	
Telephone numbers of emergency services, including the local fire-fighting services, must be posted conspicuously in the contractor's office and near the telephone. No firearms are permitted on the construction site, other than those authorised by the developer for the property security service provider if needed.	Contractor	Construction phase	
All personnel must wear Personal Protective Equipment during the construction as required.	Contractor	Construction phase	
If an environmental emergency such as fire, oil/fuel spills, sewage pipe burst, floods etc. occurs on site during the construction phase immediate actions must be taken to manage and contain the situation by the contractor/s. Within 24hours of emergency detection the ECO must be informed of the incident, where after ECO will conduct a site visit and recommend further remediation and/or rehabilitation methods to be implemented. Depending on type and extent of emergency that occurred specialists may be contacted to provide specific recommendations. An incident report must be completed and sent to municipal and governmental authorities.	Contractor ECO	Construction phase	
Performance indicator	All required notices posted at public entrances and at the site office. All personnel wearing PPE as required All emergency situations contained and reported as soon as possible and preventative measures put in place.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.		

OBJECTIVE C3: SPEED LIMIT

Project Component/s	Development site; Access roads.
Potential Impact	Speeding motorists and construction vehicles could injure personnel, members of the public or cause damage to property/infrastructure.
Activities/Risk Sources	Activities associated with facility construction such as transport of construction material, rubble and contractors.
Mitigation: Target/Objective	To protect all involved from incidents and injury.

Mitigation: Action/Control	Responsibility	Timeframe
For security and safety reasons the speed limit on the property for all contractors' vehicles is 30 km per hour. The contractor is responsible for ensuring that all his employees, sub-contractors and delivery vehicles adhere to this rule. A notices should be displayed at the entrance	Contractor	Construction phase

of the construction sites indicating that the speed limit is 30km/h		
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Performance indicator	Effective communication and procedures in place.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.

OBJECTIVE C4: CONTRACTOR'S CAMP

Project Component/s	Construction camp	
Potential Impact	Degradation of the natural environment inside/outside of the development area.	
Activities/Risk Sources	Activities associated with site construction	
Mitigation: Target/Objective	To protect and mitigate impacts on the environment.	
Mitigation: Action/Control	Responsibility	Timeframe
The location and extent of the contractor's camp area will be discussed and approved by the developer/landowner and ECO.	Developer Contractor ECO	Construction phase
All outside lighting must be down lighting, no pole or neon lights which may cause light pollution is allowed.	Contractor	Construction phase
The contractor's camp is to accommodate the site offices, temporary waste storage area, and bunded concrete/cement mixing area, contractor stores, servicing, parking and refuelling area for vehicles and machinery, as well as adequate ablution and accommodation facilities for employees.	Contractor	Construction phase
The construction camp is not to be established within 32m of a watercourse or within a no-go area	Contractor	Construction phase
Construction material will be stored at the contractor's camp, as well as on the construction site within the demarcated working areas at each construction point. Special permission may be obtained from the ECO/ER to store material on suitable substitute or ancillary locations should the need arise, and as communicated by the project engineer.	Contractor	Construction phase
Performance indicator	ECO in conjunction with the landowner and contractor will approve construction camp area outside of no-go areas and more than 32m away from the edge of a watercourse. Construction camp to be neatly fenced and to accommodate all facilities as listed above and elsewhere in EMP.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C5: DELIVERIES TO CONTRACTORS

Project Component/s	Construction site Construction camp Access roads	
Potential Impact	Increased traffic, congestion and noise for surrounding landowners / residents and other road users. Impact on the natural environment.	
Activities/Risk Sources	Activities associated with site construction	
Mitigation: Target/Objective	To protect and mitigate impacts on the environment, surrounding land uses, landowners, and personnel working on site.	
Mitigation: Action/Control	Responsibility	Timeframe
Contractors will at all times be responsible for compliance by their delivery service providers as engaged. Delivery times will be limited to working times as defined in this document.	Contractor	Construction phase

Contractors have the responsibility of advising the property security staff of deliveries expected and to be executed.	Contractor	Construction phase
Contractors shall further ensure that drivers of service providers are informed of all procedures and restrictions e.g. which access road to use, speed limits, no-go areas, demarcated construction areas, and maximum allowed vehicle mass etc., as applicable before their first visit to site.	Contractor	Construction phase
Washing of service provider delivery vehicles and equipment will not be allowed on the property and must be carried out elsewhere.	Contractor	Construction phase
Performance indicator	All delivery vehicles and staff adhere to the rules of the site.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C6: DEMARCATION, SITE CLEARANCE AND FENCING

Project Component/s	Construction site Access roads Construction camp No-go areas	
Potential Impact	Safety of the public, surrounding landowners and residents Safety of personnel working on site Safety of visitors on site Protection of sensitive environmental features	
Activities/Risk Sources	Activities associated with site construction	
Mitigation: Target/Objective	To protect and mitigate impacts on the environment, surrounding land uses, landowners, and personnel working on site.	
Mitigation: Action/Control	Responsibility	Timeframe
Demarcate no-go areas before any land clearing occurs under the supervision of an ECO	Contractor ECO	Construction phase
The ECO together with the site manager must indicate each construction site and/or access route to be demarcated and demarcation methods to be used before construction commences and construction personnel will not be allowed beyond the construction perimeter of the site. Physical demarcation of construction sites should at the very least be via colour coded posts at least 1,5m high. Relatively small construction areas can be fenced with wooden or metal post at 3m centres with 1 plain wire strand tensioned horizontally at 900mm from ground level. Commercially available danger tape may also be wrapped around the wire strand. For large areas, like fairways, these posts are to be at 15m centres with 5 equidistant easily visible lime spot markings in between.	Contractor ECO	Construction phase
Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase	Contractor	Construction phase
Site clearance along the border of the no-go areas must be done under the supervision of an ECO.	Contractor ECO	Construction phase
Personnel should be restricted to the construction camp site and immediate construction areas only.	Contractor	Construction phase
Construction areas and access routes must be clearly demarcated to restrict access/egress across such demarcated lines and minimise environmental impact.	Contractor ECO	Construction phase
All activities including stockpiling must occur within this demarcated area.	Contractor	Construction phase
The Contractor responsible for impacting on areas outside of the demarcated construction areas must fund	Contractor	Construction phase

reinstatement or rehabilitation of damaged areas and features.		
The onus here will fall on the contractors to ensure all respect these no-go lines.	Contractor	Construction phase
Failure to ensure discipline will lead to the immediate erection of more physically challenging structures.	Contractor	Construction phase
No run-off oil, cement, or any other building material is to be permitted, or allowed to enter the no-go areas	Contractor	Construction phase
In the event that sensitive features outside of demarcated development areas are threatened by construction activities, the temporary fencing off of these areas or the construction area, when working in a mainly natural environment, is recommended and will be determined by the ECO.	Contractor ECO	Construction phase
Remove and conserve topsoil layer and overburden material for rehabilitation after construction activities have ceased. Topsoil stockpiles should be convex and should not exceed 1.8m in height, and if required be covered by anchovy net as necessary to prevent wind erosion	Contractor	Construction phase Rehabilitation
Removal of soil must be kept to a minimum as far as possible and should only take place in areas where development will take place as part of the approved development footprint.	Contractor	Construction phase
Performance indicator	Demarcated construction areas and/or no-go areas remain demarcated and undisturbed throughout construction phase.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C7: INDIGENOUS FAUNA AND FLORA

Project Component/s	Construction site Access roads Construction camp No-go areas	
Potential Impact	Impact on indigenous fauna and flora.	
Activities/Risk Sources	Activities associated with site construction	
Mitigation: Target/Objective	To protect and mitigate impacts on the indigenous fauna and flora.	
Mitigation: Action/Control	Responsibility	Timeframe
Indigenous plants or wild animals including reptiles, amphibians, birds, etc. may not be damaged or harmed or interfered with. Vegetation removed as part of the legitimate development requirements is excluded.	Contractor	Construction phase
Trapping, poisoning and/or killing of animals is specifically and strictly forbidden.	Contractor	Construction phase
All indigenous vegetation and soil materials must be stockpiled and stored (at site identified by ECO), and used for rehabilitation of the disturbed areas upon construction completion.	Contractor ECO	Construction phase
Demarcate proposed no-development areas before construction commences and maintain demarcation throughout construction phase to ensure that it is not impacted upon.	Contractor	Construction phase
Personnel should be restricted to the construction camp site and immediate construction areas only.	Contractor	Construction phase
Site clearance along the border of the no-go areas must be done under the supervision of an ECO.	Contractor ECO	Construction phase
Rehabilitate impacted indigenous vegetation areas outside of the development areas immediately if disturbed.	Contractor	Construction phase Rehabilitation phase

Conduct search and rescue of vegetation species of conservation concern and tortoises under the supervision of a qualified ECO before construction site clearance commence.	Contractor	Construction phase
Restrict development to low botanical sensitivity area as delineated by the specialist throughout construction phase, ensuring that no areas outside of the proposed development footprint area are further disturbed.	Contractor	Construction phase
A rehabilitation plan devised by qualified personnel and implemented to restore and improve saltmarsh habitats and other estuarine vegetation (reeds and sedges) in the temporary caravan park and in other areas highlighted in the Draft EMP (Pienaar, 2023a).	Contractor	Construction phase
The development of an alien and invasive species management programme for the removal and ongoing control of alien plants on the property.	Contractor	Construction phase
In areas with exposed soil, temporary measures should be implemented while allowing indigenous vegetation to re-establish to prevent erosion and turbidity in the estuary.	Contractor	Construction phase
Monitoring of stormwater runoff for contaminants and small particles of litter that would have otherwise been trapped within the saltmarsh or other estuarine vegetation	Contractor	Construction phase
Inform all staff about sensitive estuarine habitats and species.	Contractor	Construction phase
Constrain spatial extent of impacts to the minimum required.	Contractor	Construction phase
Keep construction equipment within the developmental footprint, and do not disturb sediment outside this area.	Contractor	Construction phase
Areas of bare ground resulting from the proposed construction activities should be appropriately revegetated.	Contractor	Construction phase
Performance indicator	No indigenous fauna and flora and their habitats outside of approved development footprint areas are impacted upon. All vegetation and materials removed from site during excavations stockpiled and re-used for rehabilitation of disturbed sites.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C8: ALIEN INVASIVE PLANTS

Project Component/s	Construction site Access roads Construction camp	
Potential Impact	Alien/invasive plant species spread into natural/indigenous vegetation areas.	
Activities/Risk Sources	Activities associated with site construction and associated disturbance of natural areas	
Mitigation: Target/Objective	To protect and mitigate impacts on the environment.	
Mitigation: Action/Control	Responsibility	Timeframe
The contractor must clear all weeds and alien invasive plant from the proposed development sites, access routes and construction camp.	Contractor	Construction phase
No on-site burying, dumping or stockpiling of any weeds or invasive species must occur. They should be removed from the site and dumped at a suitable dumping site from which seed cannot escape.	Contractor	Construction phase
The contractor must make sure of and implement all legal requirements regarding herbicide application	Contractor	Construction phase

procedures if herbicide is to be used to control weeds/invasive plants. The instructions on the herbicide labels must be strictly followed throughout application. .		
The contractor shall take all necessary precautions to prevent overspray of herbicides outside of the demarcated construction areas and onto natural veld.	Contractor	Construction phase
All personnel working with any herbicide, pesticide or fertilizer must be registered and comply with the requirements set in these registrations.	Contractor	Construction phase
All equipment associated to herbicides and pesticides must be maintained in accordance to the set standards.	Contractor	Construction phase
The disposal of all redundant and empty containers of herbicides and pesticides must be controlled and disposed of at a waste management facility licensed to do so under the National Environmental Management: Waste Act.	Contractor	Construction phase
Undertake construction activities only in identified and specifically demarcated areas.	Contractor	Construction phase
An important aspect of on-going maintenance is the monitoring of the rehabilitated sites and access road verges for alien plant species.	Contractor	Construction phase
Ensure building materials brought onto site are free of alien seeds.	Contractor	Construction phase
Materials such as sand and stone should, wherever possible, be sourced from local areas which are free of alien plants.	Contractor	Construction phase
Rehabilitation of disturbed area should be done with seeds collected in the area during rehabilitation and with topsoil as derived of the development site	Contractor	Construction phase Rehabilitation phase
The contractor must make sure of, and allow, all legal requirements regarding herbicide application procedures. It is vital that the contractor becomes familiar with all the information detailed on every herbicide label before using it. The instructions on the label must be strictly followed throughout. The contractor shall take all necessary precautions to prevent overspray of herbicides outside of the demarcated construction areas and onto natural veld. All personnel working with any herbicide, pesticide or fertilizer must be registered and comply with the requirements set in these registrations. The contractor must put a system in place to control the use of herbicides and pesticides. All equipment associated to herbicides and pesticides must be maintained in accordance to the set standards. The disposal of all redundant and empty containers of herbicides and pesticides must be controlled and disposed of at a waste management facility licensed under the National Environmental Management: Waste Act	Contractor	Construction phase Rehabilitation phase
The removal of the planted beefwood (Category 1b within a riparian zone)	Contractor	Construction phase Rehabilitation phase
No further planting of beefwood or other invasive species (Department of Environmental Affairs (DEA), 2016) to act as windbreakers – use of indigenous species is advised.	Contractor	Construction phase Rehabilitation phase
The development of an alien and invasive species management programme for the removal and ongoing control of alien plants on the property	Contractor	Construction phase Rehabilitation phase
Performance indicator	All possible introduction and spreading of alien invasive plant species are controlled.	

Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.
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OBJECTIVE C9: STORM WATER MANAGEMENT

Project Component/s	Construction site Access roads Construction camp No-go areas		
Potential Impact	Erosion due to poor storm water management. Pooling of water / flooding in portions of the development site due to poor storm water management.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts on the environment.		
Mitigation: Action/Control	Responsibility	Timeframe	
To minimise or prevent erosion and overflowing/flooding the work must be done as far as possible during the dry season.	Contractor	Construction phase	
Areas disturbed during construction must be re-shaped as according to surrounding contours and stabilised as soon as possible.	Contractor	Construction phase	
All roads need to be maintained and monitored and visible signs of possible erosion immediately rehabilitated.	Contractor	Construction phase	
All areas impacted during construction must be maintained and monitored and visible signs of possible erosion immediately rehabilitated, and prevention measures put in place.	Contractor	Construction phase	
It will be the responsibility of the developer to ensure contractors apply erosion control measures throughout the period of risk and that the works are protected from damage that may be caused by rainwater runoff.	Contractor	Construction phase	
Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.	Contractor	Construction phase	
Adequate provisions of stormwater management including inter alia channels, litter traps etc. must be used to divert stormwater away from the activities that could lead to its contamination.	Contractor	Construction phase	
Appropriate and effective storm water management measures should be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented should not impede storm water flow to such an extent that it is completely stopped	Contractor	Construction phase	
Performance indicator	All signs of erosion are controlled and affected areas rehabilitated.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.		

OBJECTIVE C10: ARCHAEOLOGY AND PALAEOLOGY MANAGEMENT

Project Component/s	Construction site Access roads Construction camp		
Potential Impact	The loss of cultural or heritage resources.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate the potential loss of cultural and heritage resources.		
Mitigation: Action/Control	Responsibility	Timeframe	

Should any heritage or fossil remains be exposed during any excavation or related activities, activities on the relevant site must stop immediately and these finding must be reported to the provincial heritage resource authority of the Western Cape, Heritage Western Cape (in terms of the National Heritage Resources Act, 1999 (Act No.25 of 1999) via the ECO.	Contractor ECO	Construction phase
Heritage remains uncovered or disturbed during earthworks must not be further disturbed until inspection and verification by a professional has been conducted.	Contractor Heritage Professional	Construction phase
Should any human remains be disturbed, exposed or uncovered during excavation, these shall immediately be reported to the appointed palaeontological specialist, who will report them to the South African Police Service or, if suspected to be older than 60 years, HWC (tel 021 483 9543).	Contractor Heritage Professional	Construction phase
Performance indicator	Protection of heritage resources	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C11: DIESEL FUEL AND LUBRICANT HANDLING PROGRAMME

Project Component/s	Construction site Access roads Construction camp No-go areas	
Potential Impact	Contamination of soil, storm and ground water resources as a result of an oil/diesel/lubricant spill/leak.	
Activities/Risk Sources	Activities associated with site construction	
Mitigation: Target/Objective	To protect and mitigate impacts of contaminants on the environment and hydrological features.	
Mitigation: Action/Control	Responsibility	Timeframe
Servicing of construction vehicles and machinery to take place off site at a vehicle workshop.	Contractor	Construction phase
All vehicles must be in a good condition and inspected on a daily basis with no leakages leading to possible contamination of soil or water supplies.	Contractor	Construction phase
All waste oils, fuels and lubricants are considered hazardous waste to be stored separately in bunded areas and disposed of at a licensed hazardous waste handling facility and for which safe disposal certificates must be kept.	Contractor	Construction phase
It is the responsibility of each landowner, lease holder or developer to ensure that they are aware of and adhere to the requirements of the NEM:WA as it pertains to their operations.	Contractor/landowner/ lease owner/developer	Construction phase
The following conditions related to the temporary fuel tanks must be implemented: <ul style="list-style-type: none"> The fuel tanks must be designed and installed in accordance with relevant Oil Industry standards and SANS codes where applicable for the aboveground storage tanks. The tanks must be located within a bund (110 % of the tanks capacity) in order to contain potential spills. During fuel tanker delivery, the tanker driver must be present at all times during product offloading. Should an incident occur the supply vehicle emergency cut-off switch must be activated to immediately stop fuel delivery. Flexible hoses with dry-break couplings and emergency isolation must be 	Contractor	Construction phase

<p>used. All spillage incidences and actions taken consequent thereto must be reported to the ECO and recorded in the site register.</p> <ul style="list-style-type: none"> • All fuel and flammable liquids should be stored under secure and fenced conditions and in a bunded site with the volume of the bunding capable of holding 110% of the liquid. • The applicant must ensure that effective stock inventory monitoring and regular auditing take place for the early identification of possible leaks. • The requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), must be adhered to. Within three months of the tanks ceasing to be used the tanks must be removed at the expense of the applicant, and the site, including all associated infrastructure must be rehabilitated to the satisfaction of the relevant authority. 		
<p>Refuelling:</p> <ul style="list-style-type: none"> • Refuelling of equipment must be conducted from the bunded fuel tank and pump at the contractor's camp. • Fuel tanks must be bunded and supplied with a concrete apron. Any spills on the concrete apron or floor below the tank are to be treated with OT8 or Spillsolve or equivalent as per the product instructions. • A 500 litre drawn trailer to convey diesel to the equipment for re-fuelling may also be used. Such trailer will be drawn by a specified vehicle and driver, with alternate nominated as approved by the Site Manager. Such tow vehicle may travel at 20kms per hour maximum at any time, be clearly identifiable as such, and may only tow the diesel cart should the pre requisite drip trays and emergency equipment be on the vehicle at the time. • Staff will require instruction in the identification of diesel and oil leaks and the use of Spillsolve (or equivalent) products. 	Contractor	Construction phase
<p>On-Site emergency repairs:</p> <ul style="list-style-type: none"> • Only small mobile plant and emergency repairs are to take place on site. These will require the provision of drip trays and funnels to ensure that no oil or fuel leakages occur onto the ground. Should such spill take place, then the oil saturated soil is to be placed in suitable containers and disposed of at a hazardous waste disposal site. • Any contamination of soil is to be treated with Spillsolve or similar product. Contaminated water as a result of an oil or fuel spillage on the area should similarly be treated in appropriate way, and the polluted water should be specifically removed and not allowed to merge with run-off water collected in the trap collecting all run offs from the slab. 	Contractor	Construction phase
<p>Collection of contaminated spares and waste oils:</p> <ul style="list-style-type: none"> • Contaminated spares, oil filters, gaskets, water, etc. must be collected in separate 	Contractor	Construction phase

<p>holders at the designated storage facility for disposal at a licensed H:h (hazardous waste handling) site.</p> <ul style="list-style-type: none"> Staff will require instruction in: <ul style="list-style-type: none"> -Deleterious effects of oil / fuel on the environment -Identification of oil leaks -Handling of oil / fuel leaks into soil -Location and method in storage of contaminated spares -Fire prevention and emergency drills in case of an accident 		
Any oil or diesel spills etc. must be reported to the site manager and rehabilitation measures must be taken immediately and contaminated soil disposed of at a licensed hazardous waste handling facility.	Contractor	Construction phase
Performance indicator	Ensure that fuel storage, re-fuelling, emergency repairs, collection of contaminated spares and waste oils takes place as according to requirements and that no spillages occur and if it does occur that it is handled and cleaned up accordingly.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C12: SERVICES

Project Component/s	Construction site Bulk services and network services Sewerage network Power supply Water resources/supply Access roads		
Potential Impact	Damage/loss of services infrastructure or supply.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts on existing services infrastructure and surrounding land users; landowners and residents.		
Mitigation: Action/Control	Responsibility	Timeframe	
Care and due cognisance must be taken of existing services, service routes and services restrictions. The contractor shall be held liable for damages, expenses or costs incurred for any interruption in supply, variation, frequency, or failure of any utility provider to supply service if the contractor is found to be responsible for unplanned service interruptions.	Contractor	Construction phase	
All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to.	Contractor	Construction phase	
Implement water saving requirements as per Circular C1 of 2018 - Water Crisis Response Policy Guidelines for the Western Cape	Contractor	Construction phase	
Performance indicator	Protection of existing infrastructure and minimising use of existing services.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.		

OBJECTIVE C13: ROADS AND TRAFFIC

Project Component/s	Access and internal roads
Potential Impact	Increased traffic/congestion. Construction vehicles pose a potential risk to other road uses and the natural environment if they do not use designated routes.
Activities/Risk	Activities associated with site construction

Sources			
Mitigation: Target/Objective	Designation of specific routes for construction vehicles to reduce impact on the environment and other road users.		
Mitigation: Action/Control	Responsibility	Timeframe	
Only existing access routes to the property will be used during construction work, so as to control the movement of construction vehicles. Traffic safety measures shall be considered in determining entry or exit points to public roads.	Contractor	Construction phase	
The contractor shall ensure that access to construction sites and associated infrastructure and equipment is designated off-limits to the public at all times during construction.	Contractor	Construction phase	
Traffic safety measures shall be considered in determining entry or exit points to public roads.	Contractor	Construction phase	
Adhere to speed limit and road rules.	Contractor	Construction phase	
Work during normal working hours and only use demarcated access and internal roads	Contractor	Construction phase	
Only allow drivers with valid driver's licenses to drive and/or operate construction vehicles	Contractor	Construction phase	
Performance indicator	Necessary no entry signs and speed limit signs etc. posted at all entrances and only one designated access route to the development site is used.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.		

OBJECTIVE C14: DUST, ODOUR, NOISE AND VISUAL IMPACT CONTROL

Project Component/s	Constructions site Access roads Construction camp		
Potential Impact	Excessive dust and noise production and visual impacts on surrounding land users		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	Minisation of dust and noise production and visual impacts on surrounding land users		
Mitigation: Action/Control	Responsibility	Timeframe	
The contractor is to take appropriate measures to minimise the generation of dust as a result of construction works, to the satisfaction of the affected surrounding land users.	Contractor	Construction phase	
Dust, odour and noise must be controlled appropriately and must not cause any nuisance conditions during hours of operation of the facilities and/or infrastructure.	Contractor	Construction phase	
Section 35 (2) of NEM: Air Quality Act No 39 /2004, states occupier of any premises must take all reasonable steps to prevent the emission of any offensive odour caused by any activity on premises applicable	Contractor	Construction phase	
Vegetation must be stripped from demarcated construction sites only shortly before commencing with the construction process.	Contractor	Construction phase	
During high velocity wind conditions, the contractor or his representative to evaluate the situation and make recommendations as to whether dust suppression measures are adequate, or whether to suspend work until wind speeds drop to an acceptable level.	Contractor	Construction phase	
The use of potable water for dust suppression is discouraged and alternative sources of water should be considered and discussed with municipality if required.	Contractor	Construction phase	
Construction noise levels must not pose a nuisance to	Contractor	Construction phase	

the surrounding communities and all construction working hours must be limited to normal working hours unless arranged with municipality.		
All machinery and construction vehicles must be serviced regularly and be in a good working condition to prevent excessive noise generation.	Contractor	Construction phase
Only work in approved development areas to ensure that visual footprint is kept to a minimum and ensures that construction camp and area are neat and kept clear of windblown construction waste.	Contractor	Construction phase
Construction material will be stored at the contractor's camp, as well as on the construction site within the demarcated working areas at each construction point. Special permission may be obtained from the ECO to store material on suitable substitute or ancillary locations should the need arise, and as communicated by the project engineer	Contractor	Construction phase
Construction camp must be neatly fenced and construction site must be neat and tidy.	Contractor	Construction phase
Stockpile construction materials in one specific area.	Contractor	Construction phase
Proposed construction activities must be limited to development footprint site.	Contractor	Construction phase
Noise monitoring must be implemented to ensure that noise levels produced are within allowed rural maximum levels and not causing significant disturbance to surrounding landusers. Refer to Addendum 2 of the EMP containing relevant noise regulations to be adhered to.	Contractor	Construction phase
Plant additional vegetation where needed after construction during site rehabilitation if required.	Contractor	Construction phase Rehabilitation phase
To minimise visual impact and ensure that all development, facilities and structures blends in with the sense of place no bright colours may be used for structures. Any new or proposed developments and structure must be natural pale green, brown or grey colours or white and any existing structures which is not natural pale or white colours must be screened with natural wood materials or painted as such to blend in with the surrounding environment	Contractor	Construction phase
Construction/maintenance work conducted suitable dust suppression measures i.e. temporary netting put in place.	Contractor	Construction phase
Vegetation clearance must be limited to as small as area as possible required for construction/maintenance activities and no indigenous vegetation may be removed during the implementation of such activities.	Contractor	Construction phase
Should any erosion occur necessary erosion rectification and prevention measures must be implemented as per the EMP requirements.	Contractor	Construction phase
Machinery and vehicles should be regularly maintained to prevent excessive noise. Inform all staff about sensitive estuarine habitats and species.	Contractor	Construction phase
All machinery and work activities must adhere to the requirements of the noise regulations and may not exceed rural maximum noise levels allowed	Contractor	Construction phase
Limit duration of construction activities within the Estuarine Functional Zone as far as practically possible.	Contractor	Construction phase
Efforts must be taken to reduce unnecessary noise or vibrations where possible.	Contractor	Construction phase
Minimise the duration of construction-related noise as	Contractor	Construction phase

far as practically possible.		
Keep construction equipment within the developmental footprint.	Contractor	Construction phase
Inform all staff about sensitive estuarine habitats and species.	Contractor	Construction phase
Limit construction activities only to approved layout/maintenance areas.	Contractor	Construction phase
Keep construction site neat and tidy.	Contractor	Construction phase
Implement rehabilitation and rectification measures as and if required if construction activities impacts on any sensitive landscape features i.e. watercourse, floodplain wetland areas and indigenous vegetation areas as and if required.	Contractor	Construction phase
Performance indicator	No excessive dust or noises are produced at the construction sites and no visual impact outside of approved development areas is observed.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C15: TOPSOIL AND MATERIAL REMOVAL AND STOCKPILING

Project Component/s	Construction site	
Potential Impact	Loss of topsoil and refill materials	
Activities/Risk Sources	Activities associated with site construction - excavation	
Mitigation: Target/Objective	Conserve topsoil and excavated materials to be used for rehabilitation after construction completion	
Mitigation: Action/Control	Responsibility	Timeframe
Depending on type of topsoil available and rehabilitation required after construction completion the ECO will determine if it is required to, prior to construction or earthworks commencing, remove and conserve a minimum of 100 mm topsoil from demarcated construction sites and keep it separately stockpiled (within the demarcated working area or on designated areas).	Contractor ECO	Construction phase
Topsoil stockpiles must be convex and should not exceed 1.8 metre in height, and if required be covered by anchovy net as necessary to prevent wind erosion.	Contractor	Construction phase
Topsoil must not be compacted in any way, especially by vehicles riding over it.	Contractor	Construction phase
Surplus sub-soil that becomes available during construction work and building operations must be used as fill material on site.	Contractor	Construction phase
Plant material stockpiled must be chopped in \pm 300 mm pieces and scattered over the disturbed areas to be rehabilitated at construction completion	Contractor	Construction phase
Performance indicator	Topsoil separately stored and safeguarded from erosion at designated areas and re-used on sites to be rehabilitated at construction completion.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C16: APPROPRIATE USE OF CONSTRUCTION MACHINERY

Project Component/s	Construction site Access roads Construction camp	
Potential Impact	Environmental disturbance due to incorrect use of machinery	
Activities/Risk Sources	Activities associated with site construction	
Mitigation:	Use the correct machinery for the proposed tasks and ensure that	

Target/Objective	machinery is properly operated		
Mitigation: Action/Control	Responsibility	Timeframe	
The contractor must at all times carefully consider what machinery is appropriate to the task to minimise the extent of environmental damage.	Contractor	Construction phase	
No machinery is to operate outside of any demarcated working area.	Contractor	Construction phase	
Operators of machinery must be suitably qualified.	Contractor	Construction phase	
All machinery and heavy vehicles to be parked at night at the defined contractor's camp.	Contractor	Construction phase	
To prevent the dispersal of alien seeds construction vehicles and machinery must be washed regularly and away from any watercourse.	Contractor	Construction phase	
Performance indicator	Correct and successful use of construction machinery on site by qualified personnel.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.		

OBJECTIVE C17: ANTI-EROSION MEASURES

Project Component/s	Construction site Access roads Construction camp		
Potential Impact	Wind/water erosion as a result of construction activities.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	Reduce the impact of erosion by implementing anti-erosion measures.		
Mitigation: Action/Control	Responsibility	Timeframe	
The contractor shall take all appropriate and active measures to prevent and if prevention is not possible to mitigate erosion, especially wind and water erosion, resulting from activities on site to the satisfaction of the ECO.	Contractor	Construction phase	
During construction, the contractor shall protect areas susceptible to wind and water erosion, by installing all the necessary temporary and permanent works if required and indicated by the ECO. Measures can include brush packing, anchovy net stabilisation, etc.	Contractor ECO	Construction phase	
Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase.	Contractor	Construction phase	
Access to roads and other areas must be controlled to avoid disturbance of areas outside the development footprint. Personnel should be restricted to the construction camp site and immediate construction areas only.	Contractor	Construction phase	
Undertake dust suppression as needed, without using potable water resources.	Contractor	Construction phase	
Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented must not impede storm water flow to such an extent that it is completely stopped. Current hydrological processes outside of the proposed development footprint area must continue to function as is.	Contractor	Construction phase	
Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion	Contractor	Construction phase Rehabilitation phase	

Performance indicator	All possible erosion impacts are controlled and rehabilitated.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.

OBJECTIVE C18: CONSTRUCTION MATERIAL

Project Component/s	Development site; Infrastructure; Access roads.
Potential Impact	Aesthetically displeasing/ visual impacts and causing a nuisance to surrounding landowners/residents.
Activities/Risk Sources	Activities associated with facility construction such as the storage of construction material.
Mitigation: Target/Objective	Reduce the visual impact or nuisance to the surrounding landowners/residents.

Mitigation: Action/Control	Responsibility	Timeframe
Construction material will be stored at the contractor's camp, as well as on the construction site within the demarcated working areas at each construction point. Special permission may be obtained from the ECO/ER to store material on suitable substitute or ancillary locations should the need arise, and as communicated by the project engineer.	Contractor	Construction phase

Performance indicator	To minimise the impact on the surrounding land users.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.

OBJECTIVE C19: FIRES

Project Component/s	Development site; Infrastructure; Construction camps.
Potential Impact	Uncontrolled fire on/off site, resulting in damage to the environment, property, injuries/death to personnel on site, or injuries/death to the public.
Activities/Risk Sources	Activities associated with facility construction.
Mitigation: Target/Objective	To protect and mitigate the safety of people, property, and the environment on and off site by preventing uncontrolled fires.

Mitigation: Action/Control	Responsibility	Timeframe
Fires will only be allowed at dedicated fire pits and adequate fire-fighting equipment should be available on site in good working order at all times as prescribed by the fire management protocols.	Contractor	Construction phase

Performance indicator	No fire occurred to damage the surrounding environment and land uses and management actions are in place should a fire occur.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.

OBJECTIVE C20: MEASURES TO PROTECT ADJACENT RIVER/ESTUARY FROM CONSTRUCTION IMPACTS

Project Component/s	Rivers
Potential Impact	Destruction of natural hydrological systems and the pollution of surface and ground water resources.
Activities/Risk Sources	Activities associated with facility construction.

Mitigation: Target/Objective	To protect and mitigate impacts on the environment and hydrological features.
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Mitigation: Action/Control	Responsibility	Timeframe
<p>Polluted runoff must be prevented from entering the rivers close to the site or the contamination of groundwater resources.</p> <p>Undertake storm water management measures as required.</p> <p>All spillage incidents and actions taken consequent thereto must be reported to the ECO and recorded in the site register.</p> <p>Essential mitigation measures:</p> <ul style="list-style-type: none"> • Limit the footprint area of the construction activity to what is absolutely essential in order to minimise the loss of aquatic habitats in the area. • Keep all demarcated sensitive zones outside of the construction area off limits during the construction phase of the project; <p>Recommended mitigation measures</p> <ul style="list-style-type: none"> • Permit only essential construction personnel within 32m of all riparian systems; • Restrict construction activities to the drier summer months, if possible, to avoid sedimentation and siltation of riparian features in the vicinity of the proposed development and aim for completion in early spring at which time revegetation should take place allowing for a full summer growing season to become established. • Disturbance in the river (i.e. jetty maintenance) must preferably be in summer and definitely not when the river flows at its strongest. • Undertake construction activities only in identified and specifically demarcated areas. • Invasive vegetation to be removed during construction to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation. • At no point may construction equipment stand unauthorised within or near the river. 	Contractor	Construction phase

Performance indicator	Impacts on hydrological features minimized and mitigated.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.

OBJECTIVE C21: AN EFFECTIVE MONITORING SYSTEM TO DETECT ANY LEAKAGE OR SPILLAGE OF ALL HAZARDOUS SUBSTANCES DURING THEIR TRANSPORT, HANDLING USAGE AND STORAGE. THIS MUST INCLUDE PRECAUTIONARY MEASURES TO LIMIT THE POSSIBILITY OF OIL AND OTHER TOXIC LIQUIDS FROM ENTERING THE SOIL OR STORM WATER SYSTEMS

Project Component/s	Development site; Access roads.
Potential Impact	Contamination of soil, storm water and ground water resources by hazardous substances.
Activities/Risk Sources	The handling, storage and use of hazardous substances.
Mitigation: Target/Objective	Prevention and mitigation of the environment contaminated as a result of exposure to hazardous substances.

Mitigation: Action/Control	Responsibility	Timeframe
<p>The EA holder, Land Owner, Site Environmental Officer and Environmental Control officer will do daily, weekly and monthly inspections and report and monitor compliance with the management actions included in the EMPr and EA conditions. These monitoring and reporting requirements are recorded in several sections of the EMPr. Monitoring will focus on signs of spillages and procedures during handling and storage of dangerous goods as described in the EMPr. The section on storage and handling of dangerous goods in the EMPr will be enforced.</p> <p>The storage of hazardous substances (i.e. fuel storage, etc.) should be on impermeable surfaces within bunds (to accommodate 110% of the liquid volume). It is recommended that an emergency response plan is compiled for implementation in the event of a spill or leakage of hazardous substances.</p> <p>Earth-moving construction activities should ideally take place within the dry season (i.e. October – April) to reduce the risk of contaminated runoff and sediment from the construction activities/site washing into the watercourses.</p>	Contractor	Construction phase

Performance indicator	Impacts on hydrological features minimized and mitigated. Handling, storage and use of hazardous substances in accordance with relevant legislation.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.

OBJECTIVE C22: INTEGRATED WASTE AND HAZARDOUS MATERIALS MANAGEMENT PLAN

Project Component/s	Access roads Construction camp Storage areas Construction site Adjacent land and environmental systems
Potential Impact	<p>Incorrect storage, handling, transporting and disposing of hazardous substances resulting in the contamination of soil, storm and ground water resources.</p> <p>Incorrect storage, handling, transporting and disposing of general solid waste resulting in litter, storm water pollution, and creating a nuisance to adjacent landowners/residents.</p> <p>Incorrect storage, handling, transporting and disposing of effluent/liquid waste resulting in the contamination of the storm water system, adjacent property, or hydrological systems.</p> <p>Incorrect storage, handling, transporting and disposing of garden waste, alien vegetation or natural vegetation during the clearing phase of the development site.</p> <p>Poor waste management practices, resulting in waste not being reduced, re-used or recycled.</p>
Activities/Risk Sources	Activities associated with site construction
Mitigation: Target/Objective	<p>Protect and mitigate impacts on the environment and hydrological features</p> <p>Ensure that the storage and handling of chemicals and hydrocarbons on-site does not cause pollution to the environment or harm to persons</p> <p>Ensure that the storage and maintenance of machinery on-site does not</p>

	<p>cause pollution of the environment or harm to persons Comply with waste management guidelines Minimise production of waste Ensure appropriate waste storage and disposal</p>	
Mitigation: Action/Control	Responsibility	Timeframe
Specific areas must be designated on-site for the temporary management of various waste streams, i.e. general refuse, construction waste (wood and metal scrap) and contaminated waste as required. Location of such areas must seek to minimise the potential for impact on the surrounding environment, including prevention of contaminated runoff, seepage and vermin control.	Contractor	Construction phase
Spillage of oils and fuels must be minimized with the use of drip trays in the garage/workshop areas.	Contractor	Construction phase
An integrated waste management approach that is based on waste minimisation must be used and must incorporate reduction, recycling, re-use and disposal where appropriate. Where practically possible, construction and general wastes on-site must be reused or recycled. Bins and skips must be available on-site for collection, separation, and storage of waste streams (such as wood, metals, general refuse etc.) Also refer to Addendum 3: Construction and Demolition Waste Management Guideline indicating how construction waste can and must be reused and recycled as far as possible to avoid landfill disposal.	Contractor	Construction phase
Please note that section 28 (1) of the National Environmental Management Act, 1998 (Act No 107 of 1998) as amended (NEMA) states: "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 authorized by law or cannot reasonable be avoided or stopped, to minimize and rectify such pollution or degradation of the environment". Failure to adhere to section 28(1) of NEMA is an offence and thus particular care of the environment must be taken.	Contractor	Construction phase
Disposal of waste must be in accordance with relevant legislative requirements, including the use of licensed contractors and disposal at appropriately licensed waste disposal sites	Contractor	Construction phase
The National Information Systems Regulation must be adhered to in terms of registering and reporting of hazardous waste generated on site via the Integrated Pollutant Waste Information System (IPWIS).	Contractor	Construction phase
All stored fuels to be maintained within a sealed bund and on a sealed surface. The bund must be at least 110% of the volume of the total containers adhering to the requirements of SABS 089:1999 Part 1	Contractor	Construction phase
Fuelling areas situated around fuel tanks must be provided with an impervious layer or drip trays must be used during refuelling;	Contractor	Construction phase
Fuel storage areas must be inspected regularly to ensure bund stability, integrity, and function	Contractor	Construction phase
Oily water from bunds at the substations must be removed from site by licensed contractors	Contractor	Construction phase
The storage of any flammable and combustible liquids such as oils will be in designated areas which are appropriately banded, and stored in compliance with MSDS files	Contractor	Construction phase

Any storage and disposal permits/approvals which may be required for hazardous substances must be obtained, and the conditions attached to such permits and approvals will be compiled with and copies kept on site in the environmental file	Contractor	Construction phase
Transport, storage and disposal of all hazardous substances must be in accordance with the relevant legislation and regulations	Contractor	Construction phase
Washing of construction vehicles and equipment will only be allowed at the construction camp in bunded areas.	Contractor	Construction phase
Spill kits must be made available on-site for the clean-up of spills and leaks of contaminants. 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.	Contractor	Construction phase
Implement an effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems. Leakage of fuels must be avoided at all times and if spillage occurs, it must be remediated immediately.	Contractor	Construction phase
In the event of a major spill or leak of contaminants, the relevant administering authority must be immediately notified as per the notification of emergencies/incidents Spilled cement, fly ash and concrete must be cleaned up as soon as possible and disposed of at a suitably licensed waste disposal site. Any contaminated/polluted soil removed from the site must be disposed of at a licensed hazardous waste disposal facility.	Contractor	Construction phase
Hydrocarbon waste must be contained and stored in sealed containers within an appropriately bunded area. Waste and surplus dangerous goods must be kept to a minimum and must be transported by approved waste transporters to sites designated for their disposal and copies of the safe disposal slips must be kept in the environment file on site.	Contractor	Construction phase
Documentation (waste manifest) must be maintained detailing the quantity, nature, and fate of any regulated waste. Waste disposal records must be available for review at any time.	Contractor	Construction phase
An incident/complaints register must be established and maintained on-site.	Contractor	Construction phase
The sediment control and water quality structures used on-site must be monitored and maintained in a fully operational state at all times	Contractor	Construction phase
Upon the completion of construction, the area must be cleared of potentially polluting materials	Contractor	Construction phase
Dispose of all solid waste collected at an appropriately registered waste disposal site. Waste disposal shall be in accordance with all relevant legislation and under no circumstances may waste be burnt on site	Contractor	Construction phase
Where a registered waste site is not available close to the construction site, provide a method statement with regard to waste management.	Contractor	Construction phase

The storage of waste must comply with the National Environmental Management: Waste Act, (Act No. 59 of 2008) National Norms and Standards for Storage of Waste, 2013	Contractor	Construction phase
Waste may not be stored for a period exceeding 90 days during construction and operations of the proposed development without adherence to the National Norms and Standards for the Storage of Waste in terms of Government Notice (GN) No.926 of 29 November 2013, if the volumes stored exceed 80m ³ of hazardous waste or 100m ³ of general waste. If these thresholds are triggered, the Facility must also be registered on the Department's Integrated Pollutant and Waste Information System (http://ipwis.pgwc.gov.za/ipwis3/public) and the information must be updated regularly thereafter.	Contractor	Construction phase
Vegetation removed during the construction phase must be chipped for composting or be disposed of appropriately and may not be disposed of on the adjacent land.	Contractor	Construction phase
All waste oils, fuels and lubricants are considered hazardous waste to be stored separately in bunded areas and disposed of at a licensed hazardous waste handling facility and for which safe disposal certificates must be kept.	Contractor	Construction phase
It is the responsibility of each landowner, lease holder or developer to ensure that they are aware of and adhere to the requirements of the NEM:WA as it pertains to their operations.	Contractor/landowner/ lease owner/developer	Construction phase
The disposal of waste should be considered as a last resort after having considered waste minimization, such as avoidance, reuse and recycling of waste.	Contractor	Construction phase
The Department has initiated a 50% ban of organic waste from landfill by 2022 and a complete ban of organics to landfill by 2027. It is therefore advised that organics be separated from the general waste stream and beneficiated where possible. The construction contractor must identify the closest approved municipal or private green waste facility before site clearing activities commences. Green waste (not reused or recycled on site) must then be taken to the identified approved municipal or private green waste facility and proof must be kept of such disposal and available on site upon request.	Contractor	Construction phase
Unused/excess building material should be stored in a waste skip until it can be disposed of properly.	Contractor	Construction phase
Regular checks and removal of rubble and/or dangerous construction material (e.g. wire) found on site.	Contractor	Construction phase
During construction, building material should be stored safely so as not to impact surrounding fauna.	Contractor	Construction phase
Inform all staff about sensitive estuarine species and the responsible disposal of construction waste.	Contractor	Construction phase
Suitable handling and disposal protocols must be clearly explained, and sign boarded.	Contractor	Construction phase
Intentional disposal of any substance into the environment is strictly prohibited, while accidental spillage must be prevented, contained and reported immediately.	Contractor	Construction phase
Reduce, reuse, recycle.	Contractor	Construction phase
A rigorous environmental management and control plan (including procedures for remediation) must be	Contractor	Construction phase

developed and implemented.		
All fuel and oil must be stored with adequate spill protection.	Contractor	Construction phase
No leaking equipment or vehicles are permitted on site.	Contractor	Construction phase
All hazardous substances must be accompanied by a permit, a hazard report sheet, and a first aid treatment protocol and may only be handled by suitably trained operators.	Contractor	Construction phase
Spill kits must be available on site at all times, and staff must be trained in their proposed use.	Contractor	Construction phase
Performance indicator	Limited chemical spills outside of designated storage areas No water or soil contamination by spills No complaints received regarding waste on site or indiscriminate dumping Provision of all appropriate waste manifests for all waste streams. No construction waste outside of designated waste storage areas. No overflowing waste storage areas	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C23: MEASURES TO PROTECT SURFACE AND GROUNDWATER HYDROLOGICAL FEATURES

Project Component/s	Construction site Construction camp Adjacent natural environments/features		
Potential Impact	Destruction of natural hydrological systems and the pollution of ground water resources.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts on the environment and hydrological features.		
Mitigation: Action/Control	Responsibility	Timeframe	
All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to.	Contractor	Construction phase	
No pollution of surface water or ground water resources may occur due to any activity on the property.	Contractor	Construction phase	
Runoff must not be polluted and allowed to pool in construction areas, as this could cause contamination to the ground water resources.	Contractor	Construction phase	
No activities, including swimming, washing, recreation, ablution, vehicle washing, etc. will be permitted in any of the watercourses for construction staff. Water is to be protected and conserved at all times.	Contractor	Construction phase	
The disturbed areas should receive ongoing monitoring and management of erosion and invasive plant growth	Contractor	Construction phase	
All potential hazardous materials i.e. fuels, cement etc. should be properly stored and contained within the construction camp.	Contractor	Construction phase	
Disposal of waste from the site should also be properly managed.	Contractor	Construction phase	
Construction workers should be given ablution facilities at the construction site and regularly serviced.	Contractor	Construction phase	
All construction activities and personnel on site to stay within demarcated construction areas	Contractor	Construction phase	
Proper waste bins to be provided to construction staff and all waste to be regularly removed to municipal landfill site	Contractor	Construction phase	
Any oil or diesel spills etc. must be reported to the site	Contractor	Construction phase	

manager and rehabilitation measures must be taken immediately and contaminated soil disposed of at a licensed landfill site		
Construction vehicles must be checked for leakages on a daily basis and repaired before allowed to work within watercourses if a leakage is detected	Contractor	Construction phase
Control access to roads and construction areas to avoid disturbance of areas outside the development footprint	Contractor	Construction phase
Undertake storm water management measures as required	Contractor	Construction phase
Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.	Contractor	Construction phase
Monitor construction areas frequently for sign of erosion and if signs of erosion are detected implement repair and preventative measures immediately	Contractor	Construction phase
All infrastructure areas should be kept free of debris, intrusive growth of invasive alien plants and sediment build-up.	Contractor	Construction phase
All concrete mixing to be contained within a suitably bunded area preventing any runoff from the concrete mixing area.	Contractor	Construction phase
Ground water contamination must be prevented. Wastewater from the construction and the associated operational activities must be on par with the quality standards of the relevant authority.	Contractor	Construction phase
Any activities involving cement must be tightly controlled to prevent its passage into the river – uncured cement will increase pH and thus potentially affect ammonia toxicity.	Contractor	Construction phase
All refuelling areas must be adequately bunded.	Contractor	Construction phase
Construction work (i.e. site clearance and construction) must be carried out and completed in the low flow and low rainfall season (mid to late summer) as far as possible to minimise the impact on the flow in the drainage line.	Contractor	Construction phase
Should the construction works take place during the rainfall period, any contaminated runoff from the construction site or activities should be prevented from entering the environment.	Contractor	Construction phase
Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur. Current hydrological processes outside of the proposed development footprint area must continue to function as is.	Contractor	Construction phase
Implementation of erosion control measures such as silt fences in areas at risk of erosion/runoff.	Contractor	Construction phase
Should sand piles be left for long periods of times they should be secured with geotextile material to prevent wind mobilisation into the estuary.	Contractor	Construction phase
Where possible, construction using large volumes of sand should occur during clear weather, and loose sand should be cleared or covered during breaks in construction.	Contractor	Construction phase
Monitor construction areas post rainfall events and repair any erosion damage that may have occurred.	Contractor	Construction phase
Performance indicator	Impacts on hydrological features minimized and mitigated.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.	

OBJECTIVE C24: CONCRETE/CEMENT MIXING

Project Component/s	Concrete/cement mixing		
Potential Impact	Environmental pollution		
Activities/Risk Sources	Contaminated runoff from concrete mixing area		
Mitigation: Target/Objective	To protect and mitigate impacts on the environment and surrounding land users.		
Mitigation: Action/Control	Responsibility	Timeframe	
Concrete mixing to be sited only on proposed development footprint area which must be demarcated.	Contractor	Construction phase	
The concrete mixing areas should demonstrate good maintenance practices, including regular sweeping to prevent dust build-up.	Contractor	Construction phase	
The concrete mixing area should be designed and constructed such that clean storm water is diverted away from contaminated areas	Contractor	Construction phase	
The concrete mixing area should be bunded and lined with an impervious liner capable of containing all contaminants found within the water they are designed to collect.	Contractor	Construction phase	
Where possible, waste concrete should be used for construction purposes at the project site	Contractor	Construction phase	
Performance indicator	No concrete/cement mixing taking place within 32m of the edge of a watercourse or on un-bunded and permeable surfaces. No runoff escaping from bunded concrete mixing area.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.		

OBJECTIVE C25: REHABILITATION AND SITE CLEAN UP AFTER CONSTRUCTION

Project Component/s	All areas affected during construction		
Potential Impact	Un-stabilised disturbed areas, environmental pollution due to construction waste, unfinished construction sites		
Activities/Risk Sources	Activities associated with construction completion		
Mitigation: Target/Objective	To protect and mitigate the safety of people, property, and the environment on and off site.		
Mitigation: Action/Control	Responsibility	Timeframe	
Stabilisation and rehabilitation of disturbed sites must take place immediately after construction operations have been completed.	Contractor	Construction phase	
No construction equipment, vehicles or unauthorised personnel must be allowed onto areas that have been stabilised/rehabilitated.	Contractor	Construction phase	
The contractors must ensure that all temporary structures, equipment, waste, materials and facilities used or created on site for, or during construction activities, are removed once the project has been completed.	Contractor	Construction phase	
Only indigenous vegetation must be used to rehabilitate disturbed areas.	Contractor	Construction phase	
The disturbed areas should receive ongoing monitoring and management of erosion and invasive plant growth.	Contractor	Construction and rehabilitation phase	
Performance indicator	Constructions site are cleared of any temporary works forming part of the construction phase and disturbed areas have been rehabilitated to the satisfaction of the ECO and freshwater ecologist		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted to the site manager.		

OPERATIONAL PHASE

This following section defines the management programme for each of the identified goals during the operational phase. The programme is presented in the form of a table, which includes the components described. This programme consists of the following components:

Goals

Over-arching environmental goals for the management phase.

Objectives

The objectives are in place in order to meet these goals. These take into account the findings from existing studies and monitoring programmes.

Management Actions

The actions needed to achieve the objectives, taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.

Monitoring

Key actions to verify that objectives are being achieved, taking into consideration responsibility, frequency, methods, and reporting.

Criteria/ Targets

The criteria or targets indicate the efficacy of the management programme. The targets should be readily measurable, understandable to the layperson, cost-effective to monitor, and meet legal requirements.

Remedial Actions

Specifies actions needed to be taken if the targets are not met; or if there is an unforeseen event.

Goals

The following 11 are specified goals:

Goal 1: Waste Management and Pollution Control, including Effluent and Wastewater Management

Goal 2: Water Quality and Storm Water Management

Goal 3: Maintenance of Roads, Erosion and Dust Control Measures

Goal 4: Emergency Procedures, Security and Safety including Fire Management

Goal 5: Infrastructure Maintenance Management

Goal 6: Estuarine Management, inclusive of Alien Vegetation Management and Landscaping

Goal 7: Health Risks Management inclusive of Pest Management

Goal 8: Noise Management and Monitoring

Goal 9: Resources Demand Management and Usage Efficiency

Goal 10: Ongoing Management and Monitoring of Social and Environmental Impacts

Primary Management Objectives

The primary management objectives are:

- To manage and have sustained use of the natural systems within the context of the larger region, so as to conserve the biodiversity, ecological quality and beauty of the surrounding natural environment, also on the farms. The developer intends to preserve the unique natural resources of the farm, such as remaining indigenous vegetation.
- To set guidelines in a management plan for correct management procedures and methods, in a manner such that they may be flexible in as much as situations change, and as new technology and methods become available. For this reason, the OEMP is to be updated on a 5 year cycle to provide current dated guidance to managers, which is especially important for continuity during changes in management. The OEMP will facilitate the manager's annual planning in terms of allocating human, time and financial resources towards management tasks and responsibilities, which are then subject to independent audit.
- To maintain a finite standard and quality of finishing and service delivery at the facility. This requires ongoing maintenance of buildings, gardens and infrastructure and the repair of environmental damage caused by users, by e.g. erosion or trampling of vegetation.

Secondary Management Objectives

- Appropriate management of land uses to attain the objectives based on predicted impacts, particularly of people and the facility operation, whilst focusing on the sustainable use of the natural environment.
- To promote an ethos of environmental education and awareness to all who live on or visit the facility, focusing on the environmental management also of the greater area.

Management Program

This following section defines a management programme for the 11 goals during the operational phase. The programme is presented in the form of a table, which includes the components described

Goal 1: Waste Management and Pollution Control, including Effluent and Wastewater Management

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources for on-going Integrated Waste Management e.g. staff, equipment.</i></p>	<p>Pollution and odours</p>	<ol style="list-style-type: none"> 1. The waste accumulated at the infrastructure and surrounds needs to be managed in terms of the National Environmental Management Waste Act, 2008 (Act 59 of 2008) and the final disposal of the waste must take place at the appropriate licensed waste disposal site or recycling facility. 2. Solid waste may only be disposed of at an authorised solid waste facility in terms of abovementioned legislation. 3. Waste accumulation to be monitored and removed from the sites and surrounds on at least a two weekly basis (or more often if full) to be disposed of at a municipal landfill site. 4. Waste accumulated at stormwater outlets/discharge points must be removed at least monthly and after heavy rains. 5. All vehicles transporting waste must be closed to avoid possible pollution of waste on transport routes. 6. Waste needs to be sorted and recycled as far as possible. The minimising of waste must be promoted and alternative methods of waste management must be investigated. 7. All waste types to be handled, stored, transported and disposed of according to relevant legislature. 8. Squatting and rubble dumping adjacent to the new development is not allowed and must be controlled and regular inspections conducted to ensure control. 9. An integrated waste management approach must be implemented, based on waste minimisation, 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct thee monthly and annual audits.</p>	<p>No accumulated waste or pollution of the environment from any waste generated on site.</p>	<p>If pollution on site is detected immediate actions must be taken to contain the pollution. Within 24hours of detection the ECO must be informed of the incident, where after ECO will conduct a site visit and recommend further rehabilitation methods to be implemented. Depending on type and extent of pollution occurred specialists may be contacted to provide specific recommendations. An incident report to be compiled and sent to municipal and governmental authorities.</p>

		<p>reduction, recycling, re-use and disposal where possible.</p> <p>10. Waste may not be stored for a period exceeding 90 days without adherence to the National Norms and Standards for the Storage of Waste in terms of Government Notice (GN) No.926 of 29 November 2013, if the volumes stored exceed 80m³ of hazardous waste or 100m³ of general waste. If these thresholds are triggered, the Facility must also be registered on the Department's Integrated Pollutant and Waste Information System (http://ipwis.pgwc.gov.za/ipwis3/public) and the information must be updated regularly thereafter.</p> <p>11. During the event of environmental pollution the relevant authorities including the Directorate Pollution Management must be informed within 14 days as per Section 30(10) of NEMA, and the necessary step must be implemented as soon as possible to rehabilitate polluted areas and prevent re-occurrence of environmental pollution.</p> <p>12. Dust, odour and noise must be controlled appropriately and must not cause any nuisance conditions during hours of operation of the facilities and/or infrastructure.</p> <p>13. Section 35 (2) of NEM: Air Quality Act No 39 /2004, states occupier of any premises must take all reasonable steps to prevent the emission of any offensive odour caused by any activity on premises applicable</p> <p>14. Ground water contamination must be prevented. Wastewater from the associated operational activities must</p>			
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		<p>be on par with the quality standards of the relevant authority.</p> <p>15. Please note that section 28 (1) of the National Environmental Management Act, 1998 (Act No 107 of 1998) as amended (NEMA) states: "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 authorized by law or cannot reasonable be avoided or stopped, to minimize and rectify such pollution or degradation of the environment". Failure to adhere to section 28(1) of NEMA is an offence and thus particular care of the environment must be taken.</p> <p>16. No waste other than plant materials may be burned on site.</p> <p>17. Domestic waste not suitable for compost or bio electricity generation needs to be stored in skips for transport to the Local Authorities registered Landfill site</p> <p>18. The Resort should implement a no tolerance to littering approach.</p> <p>19. Regular checks and removal of litter found on site, especially before predicted rain when litter is most likely to run into the estuary.</p> <p>20. Bins should be easily accessible to anyone using the site.</p> <p>21. A suggestion would be to put up signs which inform the users of the site the impacts of plastic pollution within a marine/estuarine environment (potentially collaborate with CapeNature).</p>			
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		<p>22. Prevention of contaminated water (including sewage) entering the estuary.</p> <p>23. Regularly conduct checks and routine maintenance on sewage conservancy tanks and ablution facilities to prevent leaks.</p> <p>24. Any leaks/spills should be reported immediately and fixed as quickly as possible.</p> <p>25. All food waste produced by the restaurant should be out of reach of scavengers and disposed of responsibly.</p> <p>26. The Resort should educate Visitors about responsible disposal of food waste and provide facilities which allow them to dispose of food waste without attracting scavengers (i.e. scavenger proof bins).</p>			
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Construction and demolition waste as well as green waste to be managed as far as possible in accordance with the Construction and Demolition waste Management Guidelines:

Applications for Construction and Demolition Waste minimisation category		
Concrete	Crushed and used for construction site applications (e.g. foundations for structures) and roadwork applications (e.g. road sub-base and excavation fill applications).	Recycle
Bricks	Building and paving.	Re-use
	Crushed and used as cover material at WDFs.	Recycle
Asphalt	Reclaimed asphalt may be used to patch roads, for on-site processing into hot-mix for roads or road base or fill material.	Re-use
Wood	Re-use wooden frames.	Re-use
	Use in mulch production for landscaping.	Recycle
	Bulking agent in compost.	
	Sawdust for animal bedding.	
	Use as fuel.	Recovery
Drywall	Soil amendment (gypsum), cement additive (gypsum) and new dry-wall (gypsum).	Recycle
Mixed rubble	Crush for landfill applications (landfill cover material, berms in landfills to give structural strength to cells, cell cover once a cell is filled, to provide paved and firm tipping or off-loading zones, particularly during rainy conditions on landfill sites).	Recycle

Glass	Re-use of windows and mirrors.	Re-use
Green waste	Landscaping purposes and compost.	Re-use

Goal 2: Water Quality and Storm Water Management

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources for on-going Water Quality and Storm Water Management e.g. staff, equipment, budget.</i></p>	<p>Pollution, odours and erosion</p>	<ol style="list-style-type: none"> 1. All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to. 2. No storm water runoff from any premises containing waste, or water containing waste emanating from infrastructure may be discharged into a water resource nor into the environment. Polluted storm water must be contained. 3. The storm water infrastructure must be monitored and maintained on a regular basis by the developer. All waste within the channels must be removed on a weekly base and at the discharge points on a monthly base and after heavy rains. If any erosion and/or degradation of the storm water channel or surrounds are noticed immediate action must be taken by the developer to rectify the situation. (Corrective and preventative measures taken will depend upon type and extent of erosion and/or degradation occurring). 4. Storm water infrastructure should be monitored at least on a 3 monthly basis and any degradation or faults attended to immediately. 5. Ensure no pollution of any water resources, including surface water, storm water and groundwater takes place as a result of any activities on the site. 6. Ensure that no water other than storm water be discharged in the storm water system. 7. Storm water should be directed away from the roads and into the existing natural flow paths/drainage lines on site. 8. All waste within the storm water 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met. Responsibility: Developer to implement actions and appoint external ECO to conduct thee monthly and annual audits.</p>	<p>No accumulated waste or signs of erosion or pollution within watercourses at development sites.</p>	<p>If pollution on site is detected immediate actions must be taken to contain the pollution. Within 24hours of detection the applicant must be informed of the incident, where after a site visit will be conducted and recommend further rehabilitation methods to be implemented. Depending on type and extent of pollution occurred specialists may be contacted to provide specific recommendations. An incident report to be compiled and sent to relevant government authorities</p>

		<p>channels must be removed on a monthly base and after heavy rains.</p> <ol style="list-style-type: none"> 9. Disturbed and open space areas must be rehabilitated and planted with indigenous vegetation to promote rehabilitation 10. If any erosion and/or degradation of the channel are noticed immediate action must be taken by the developer to rectify the situation. (Corrective and preventative measures taken will depend upon type and extent of erosion and/or degradation occurring). 11. Operate and maintain stormwater infrastructure as per EMP requirements. 12. Monitor for erosion of surrounding undeveloped areas and implement storm water management measures as recommended in the environmental management program. 13. Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion. 14. Appropriate and effective storm water management measures should be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented should not impede storm water flow to such an extent that it is completely stopped. 15. Rehabilitate or stabilise eroded areas immediately to prevent increase/spread of erosion. 16. Only use existing access road to the site for operational purposes and avoid disturbance of "new" areas outside the existing access roads and infrastructure footprint. 17. Stormwater infrastructure must not cause erosion of the surrounding remaining undeveloped areas, but still allow current 			
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		hydrological processes to continue as is. 18. The developer must maintain all stormwater infrastructure on a regular basis to ensure that it is working effectively and is not blocked with waste.			
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Goal 3: Maintenance of Roads, Erosion and Dust Control Measures

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources) for on-going erosion control management (e.g. staff, equipment, budget)</i></p>	<p>Erosion, sink-holes and or blocking of storm water systems. Damage to Infrastructure.</p>	<ol style="list-style-type: none"> 1. On-going monthly monitoring and management of roads, roadways and areas susceptible to erosion. 2. Ensure suitable indigenous vegetation cover on non-hardened surfaces. 3. Control runoff of storm water to prevent soil erosion. 4. Avoid the formation of sink-holes on sensitive soils. 5. Erosion control and maintenance will be an on-going process, especially erosion developing on or as a result of roads. The developer must implement erosion control measures to ensure that no erosion occurs on site. 6. Cleared areas and roadways must also be monitored for signs of excessive dust during high wind velocity. Should excessive dust be produced suitable dust suppression methods must be discussed with the ECO and implemented as and if required. Note – dust suppression with potable water is not recommended. 7. Visually inspect cleared area boundaries and exposed surfaces for signs of erosion at least once a month and after heavy rains. 8. If erosion channels are discovered the cause of erosion must be determined and erosion rectification and prevention measures must be implemented to rehabilitate eroded areas and prevent future erosion. 9. Monitor the cleared area for excessive dust production. Should excessive dust be produced during extreme 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct thee monthly and annual audits.</p>	<p>No signs of erosion within watercourses at development sites.</p>	<p>If erosion is detected immediate actions must be taken to contain the erosion. Depending on type and extent of erosion occurred specialists may be contacted to provide specific recommendations.</p>

		<p>windy conditions non-potable water (if available) should be used to dampen bare soil areas to mitigate windblown dust.</p> <p>10. For long term mitigation of erosion and dust production cleared areas must be stabilised with indigenous vegetation</p>			
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Goal 4: Emergency Procedures, Security and Safety including Fire Management

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources for on-going safety, security and emergency procedures. e.g. staff, equipment, budget.</i></p>	<p>Pollution, floods, fire and health risks.</p>	<ol style="list-style-type: none"> 1. Actions plans in case of emergencies such as flooding, fires or pollution to be compiled and implemented by the developer. And all staff to be informed and made aware of emergency protocols to be followed. 2. Sufficient Fire Fighting equipment to be available on site. 3. Yearly pre-season testing and servicing of firefighting equipment. 4. Annual maintenance of firebreaks before the main fire season as per fire management plan. 5. Always invoke security access control to the site . 6. All dangerous goods as classified under SANS 10228:2006 to be identified upon receipt and stored to the required standards. 7. All supplier vehicles will comply to SANS 1518:2005 standards. 8. Any emergency incident, 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct thee monthly and annual audits.</p>	<p>Necessary emergency plans in place and available to the public</p>	<p>Emergency response procedures to be followed as required. An incident report to be compiled and sent to relevant government authorities</p>

		<p>originating at the development site, which falls within the definition of section 30(1)a of the National Environmental Management Act (NEMA), Act 107 of 1998, must be dealt with by the facility in accordance with Section 30 of NEMA.</p> <p>9. In the event of any incident ensure containment by the responsible person.</p> <p>10. On-site emergency plans should be reviewed regularly.</p>			
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Fire Management

Such legislation applies to the open countryside beyond urban limits and puts in place a range of legal requirements.

The responsibilities of people who own or control land.

The landowner on whose land a fire may start, or from whose land it may spread across boundaries, must have in place:

- Prepared firebreaks on your boundary, if there is a reasonable risk of fire.
- Have available such equipment, protective clothing and trained personnel required to extinguishing such fire as may occur.
- Take all reasonable steps to notify the fire chief of the local authority should a fire break out.
- Do everything in their reasonable power to stop the spread of the fire.

The Act also requires that should the owner be absent, a known and identified other person responsible needs to be present on or near this land to:

- Extinguish a fire if one breaks out, or assist or instruct others to do so
- Take all reasonable steps to alert the neighbours and Fire Chief.
- The owner may appoint an agent to act on his or her behalf to perform these duties.

Goal 5: Infrastructure Maintenance Management

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources e.g. staff, equipment, budgets, for on-going infrastructure maintenance management</i></p>	<p>Degradation of built infrastructure leading to additional impacts such as traffic congestion, environmental degradation etc.</p>	<ol style="list-style-type: none"> 1. No pollution of surface water or ground water resources may occur due to any activity. 2. The infrastructure must be monitored and kept free of silt/sediment, waste or debris built-up and intrusive growth of invasive alien plants at least annually before the main rainfall season and all excess silt built-up, waste or debris must be removed immediately. 3. Existing access roads to the sites must be used to gain access. No new access roads may be cleared. 4. All of the sites must be constantly monitored for any sign of erosion and if erosion is detected immediate action must be taken to rehabilitate the impacted area and prevent any further erosion. 5. Undertake storm water management measures as required. 6. No water may be abstracted from any water resource without the appropriate prior authorisation from the delegated authority and all relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to. 7. Should any erosion, illegal waste dumping, vegetation clearance, informal settlement establishment etc. occur within the buffer and no-go areas the developer must ensure that these impacts are rectified as soon as possible and take active steps to rehabilitate the 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct thee monthly and annual audits.</p>	<ol style="list-style-type: none"> 1. Adequate annual Budgets 2. On-going employment of ECO and maintenance staff 	<p>To be determined</p>

		<p>impacted areas and prevent these impacts from re-occurring.</p> <p>8. All domestic waste windblown or illegally dumped within the no-go areas site must be removed by the developer at least on a monthly basis.</p>			
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Goal 6: Estuarine Management, inclusive of Alien Vegetation and Landscaping

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocations of sufficient resources e.g. staff, equipment, budget,) for On-going alien and vegetation management and rehabilitation and management of estuary functional zone</i></p>	<p>Degradation and replacement of indigenous ecosystem characteristics i.e. indigenous flora and fauna habitat.</p>	<ol style="list-style-type: none"> 1. Any alien and invasive vegetation that occur on property owned by the developer should be controlled or removed as prescribed by the Alien and Invasive Species Regulations of 2014. 2. All disturbed areas should be cleared and kept clear of weeds and alien invasive plants. 3. Implement an on-going alien vegetation management plan, clearing the site and surrounds of all alien invasive plants. 4. Rehabilitate disturbed areas with locally indigenous vegetation species within one year of disturbance and monitor successful rehabilitation of disturbed sites. 5. Areas cleared of alien vegetation that is susceptible to erosion (especially along slopes) should be protected by installing the necessary temporary structure i.e. brush packing. Consult the ECO on a case to case basis to determine best measures to be implemented. 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct thee monthly and annual audits.</p>	<p>On-going removal of weeds and alien invasive plants at disturbed sites and rehabilitation of estuary functional zone.</p>	<p>No remedial actions required, only on-going alien vegetation clearing and monitoring as indicated.</p>

		<p>6. The developer must manage and ensure that no illegal waste dumping, vegetation clearance, informal settlement establishment etc. occurs within developed or remaining undeveloped areas.</p> <p>7. Should any erosion, illegal waste dumping, vegetation clearance, informal settlement establishment etc. occur within the developed and undeveloped areas the developer must ensure that these impacts are rectified as soon as possible and take active steps to rehabilitate the impacted areas and prevent these impacts from re-occurring.</p> <p>8. The facility to be maintained so as to blend in with the surrounding environment and minimize visual impact.</p> <p>9. Where applicable existing vegetation must either be maintained or replaced with indigenous vegetation to provide screening to surrounding residents.</p> <p>10. All landscaping to be undertaken using vegetation indigenous to the immediate area.</p> <p>11. Inspect the condition of the tributary at least once a month and after heavy rains to monitor that there are no obstructions i.e. debris and waste from Knor Varkie facilities impeding potential run-off flow.</p>			
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		<p>12. Visually inspect cleared areas and boundaries for signs of erosion at least once a month and after heavy rains.</p> <p>13. If erosion channels are discovered the cause of erosion must be determined and erosion rectification and prevention measures must be implemented to rehabilitate eroded areas and prevent future erosion.</p> <p>14. No pollution of surface water or ground water resources may occur due to activities on the property.</p> <p>15. Implementation of a rehabilitation plan devised by qualified personnel to restore and improve saltmarsh habitats and other estuarine vegetation (reeds and sedges) in the temporary caravan park and areas surrounding the new developments.</p> <p>16. Implementation of an alien and invasive species management programme for the removal and ongoing control of alien plants on the property.</p> <p>17. Implementation of permanent measures areas with exposed soil to prevent soil erosion and therefore turbidity within the estuary</p> <p>18. A rigorous environmental management and control plan (including procedures for remediation) must be developed and implemented.</p>			
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		<p>19. A rehabilitation plan must be devised by qualified personnel and implemented to restore and improve saltmarsh habitats and other estuarine vegetation in the vicinity of the proposed development.</p> <p>20. Alien species must be removed.</p> <p>21. Areas of bare ground resulting from the proposed construction activities should be appropriately revegetated or covered to prevent dust run off.</p> <p>22. Efforts must be made to inform staff and Visitors of the sensitivity and importance of the estuarine environment.</p> <p>23. Efforts must be taken to reduce unnecessary noise and light where possible.</p> <p>24. A zero tolerance to litter policy must be implemented.</p> <p>25. Sewage and litter must not enter the estuary.</p> <p>26. Limit all developments and operational activities associated with the Knor Varkie facilities to approved development areas.</p> <p>27. Rehabilitate impacted areas not used for resort operations with indigenous vegetation.</p> <p>28. Ensure that all structures constructed are in keeping with the character and natural colour schemes of the surrounding area not allowing any obtrusive bright colours or light pollution at night.</p>			
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Goal 7: Potential Health Risks Inclusive of Pest Management

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<i>Ensure allocation of sufficient resources for ongoing health risk management. e.g. staff, equipment, budget</i>	Pollution, health risks and bad odours	<ol style="list-style-type: none"> 1. All the requirements of the Health and Safety Act must be fully complied to at all times. 2. Implement fully HACCP (Food safety) accreditation standards and processes at restaurant. 3. Section 35 (2) of NEM: Air Quality Act No 39 /2004, states occupier of any premises must take all reasonable steps to prevent the emission of any offensive odour caused by any activity on premises applicable. 4. Sufficient ventilation via <ol style="list-style-type: none"> (a) installation of fans and/or extractors or (b) incorporation of natural air movement (wind). 5. Use fly traps throughout the resort facilities as and when required. 6. Vermin management must be practised by making use of the most up to date environmentally friendly control measures. Poisoning of vermin that can escape the facility after it has been poisoned is not allowed. 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct three monthly and annual audits.</p>	Adhere to all health and safety requirements to prevent health risks.	To be determined

Goal 8: Noise Management and Monitoring

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<i>Ensure allocation of sufficient resources for ongoing noise</i>	Health risks and nuisance to near	<ol style="list-style-type: none"> 1. Keep below permitted rural noise rating levels as per the noise 	Three monthly operational audit by external ECO and	Adhere to all noise management	To be determined

<p><i>control management. e.g. staff, equipment, budget</i></p>	<p>neighbours and residents</p>	<p>regulations and SANS noise ratings table below.</p> <ol style="list-style-type: none"> 2. Comply with this requirement with respect to vehicles, machinery and equipment, etc. 3. All resort facilities operations must adhere to the requirements of the noise regulations and municipal public nuisance by-law requirements and may not exceed rural maximum noise levels allowed. 4. Visitors to the site are informed of the restricted noise levels that must be maintained and fines are given to visitors if excessive noise are produced. 5. Noise monitoring must be implemented to ensure that noise levels produced are within allowed rural maximum levels and not causing significant disturbance to surrounding landusers. 6. Machinery and vehicles should be regularly maintained to prevent excessive noise during operational activities 7. All relevant noise regulations and municipal public nuisance by-law requirements as contained in Addendum 2 of the EMP must be adhered to. 8. Implement Noise Management Plan mitigation and monitoring measures as per Addendum 3 of the EMP 	<p>annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct thee monthly and annual audits.</p>	<p>requirements to prevent excessing noise.</p>	
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SANS 10103 Table 2

Table 2 — Typical rating levels for noise in districts

1	2	3	4	5	6	7
Type of district	Equivalent continuous rating level ($L_{Req,T}$) for noise dBA					
	Outdoors			Indoors, with open windows		
	Day/night $L_{Req,dn}$	Daytime $L_{Req,d}$	Night-time $L_{Req,n}$	Day/night $L_{Req,dn}$	Daytime $L_{Req,d}$	Night-time $L_{Req,n}$
a) Rural districts	45	45	35	35	35	25
b) Suburban districts with little road traffic	50	50	40	40	40	30
c) Urban districts	55	55	45	45	45	35
d) Urban districts with one or more of the following: workshops; business premises; and main roads	60	60	50	50	50	40
e) Central business districts	65	65	55	55	55	45
f) Industrial districts	70	70	60	60	60	50

Goal 9: Resources Demand Management and Usage Efficiency

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources for ongoing resources demand management. e.g. staff, equipment, budget</i></p>	<p>Excessive or undisciplined use of services or resources.</p>	<ol style="list-style-type: none"> 1. Toilets with interruptible flush mechanism to allow complete control of flushing by the user must be installed. 2. Cistern to be supplied with a fitted weight to interrupt flow or a hippo pack or water replacement device to reduce the water used in single flush. 3. No automatic flush urinals to be installed 4. Shower heads to be adjustable to reduce the water flow or have a built-in water restrictor/aerator to reduce the water flow to less than 10 litres/minute. 5. Energy saving light bulbs (CFLs / LEDs) must be installed 6. Outdoor lighting must be fitted with timers, automatic shut-off devices or photo-sensitive mechanisms to switch off the lights. 7. All outside lighting must be down lighting, no pole or neon lights which may cause light pollution is allowed. 8. Rain water harvesting must be considered and implemented where practical. 9. The installation of solar water heaters and solar photovoltaic panels/or other renewable energy sources must be considered to supplement the sites heating and electricity needs. 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct the monthly and annual audits.</p>	<p>Adhere to all health and safety requirements to prevent health risks.</p>	<p>To be determined</p>

		<p>10. Specialised designs/ equipment to save energy, water and reduce waste which is specific to the activity being undertaken (e.g. counter current rinsing) to be considered.</p> <p>11. Water usage amounts must be monitored to determine if, when and why excessive water use is taking place and mitigate where possible.</p> <p>12. Non-potable water must be used as far as possible for irrigation on lawns, camping sites, toilet water etc.</p> <p>13. Use energy efficient machinery and equipment as far as practically possible.</p> <p>14. Re-use and recycle waste produced as far as practically possible.</p> <p>15. Use water sparingly and manage/prevent the waste of water used during resort facilities operations as far as possible.</p> <p>16. Use non-potable water for activities such as landscaping irrigation.</p> <p>17. Monitor and record water amounts used for comparison purposes in the long terms so as to determine whether there are areas where water is potentially being wasted and can be used in a better way.</p>			
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Goal 10: On-going Management and Monitoring of Social and Environmental Impacts

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources for on-going monitoring of environmental impacts. e.g. staff, equipment, budget</i></p>	<p>Pollution, nuisances and health risks.</p>	<ol style="list-style-type: none"> 1. Internal formal management inspections on a monthly basis. 2. Keep a complaint register and attend to issues recorded immediately. 3. Noise levels to be maintained according to acceptable rural noise levels. 4. Three monthly external ECO compliance audits to be conducted. 5. Annual external ECO environmental compliance audits also to be reported to the Department. 6. Educating Visitors as to the uniqueness of the Berg River Estuary and encouraging Visitors to treat the environment with respect. 7. Raising awareness of the different species inhabiting the area, especially endangered and vulnerable species 8. No tolerance to littering within the site. 9. A designated area, potentially where the remnant of an old slipway is, should be allocated for people to use for entering 	<p>Three monthly operational audit by external ECO and annual compliance audits of operations vs EMP by independent ECO to identify those requirements that are not being met.</p> <p>Responsibility: Developer to implement actions and appoint external ECO to conduct the monthly and annual audits.</p>	<p>Local community satisfied with socio-economic impact of development.</p>	<p>Remediate and improve management immediately once public complaints are recorded.</p>

		<p>the water with canoes (or other boats)</p> <p>10. Loud music from the bar should be restricted to weekends, potentially evenings and occasionally for special events. The music volume must adhere to noise regulations for rural areas.</p> <p>11. It is suggested that Visitors be encouraged to use headlights or torches with a 'red light' setting which cause minimal disturbance to nocturnal animals (including fish)</p> <p>12. All operational activities associated with the Knor Varkie facilities to remain on the impacted sites and not impact on any ongoing agricultural activities taking place on the property i.e. must not cause pollution of adjacent cultivated lands etc.</p>			
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CHAPTER 8

The facility must ensure that "Any emergency incident, originating at the facility, which falls within the definition of section 30(1) a of the National Environmental Management Act (NEMA), Act of 1998, must be dealt with by the facility in accordance with Section 30 of NEMA". In the event of any incident the facility must ensure containment by the responsible person and notify the Sub-Directorate: pollution information and chemicals management section at (021) 483 2760 / 2968.

In order to ensure that the necessary environmental issues are adequately addressed and recorded, the following environmental reporting shall be undertaken:

- Incident reporting; and
- Compliance reporting

In terms of NEMA Section 30 the following shall apply during the occurrence of an "incident" due to the proposed activities:

NEMA SECTION 30 - CONTROL OF INCIDENTS

(1) In this section

(a) "incident" means 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;

(b) "responsible person" includes any person who

- (i) is responsible for the incident;
- (ii) owns any hazardous substance involved in the incident; or
- (iii) was in control of any hazardous substance involved in the incident at the time of the incident;

(c) "relevant authority" means

- (i) a municipality with jurisdiction over the area in which an incident occurs;
- (ii) a provincial head of department or any other provincial official designated for that purpose by the MEC in a province in which an incident occurs;
- (iii) the Director-General;
- (iv) any other Director-General of a national department

(2) Where this section authorises a relevant authority to take any steps, such steps may only be taken by

(a) the person referred to in subsection (1)(c)(iv) if no steps have been taken by any of the other persons listed in subsection (1)(c);

(b) the person referred to in subsection (1)(c)(iii) if no steps have been taken by any of the persons listed in subsection (1)(c)(i) and (c)(ii);

(c) the person referred to in subsection (1)(c)(ii) if no steps have been taken by the person listed in subsection (1)(c)(i);

Provided that any relevant authority may nevertheless take such steps if it is necessary to do so in the circumstances and no other person referred to in subsection (1)(c) has yet taken such steps.

(3) The responsible person or, where the incident occurred in the course of that person's employment, his or her employer must forthwith after knowledge of the incident, report through the most effective means reasonably available

(a) the nature of the incident;

- (b) any risks posed by the incident to public health, safety and property;
- (c) the toxicity of substances or by-products released by the incident; and
- (d) any steps that should be taken in order to avoid or minimise the effects of the incident on public health and the environment to
 - (i) the Director-General;
 - (ii) the South African Police Services and the relevant fire prevention service;
 - (iii) the relevant provincial head of department or municipality; and
 - (iv) all persons whose health may be affected by the incident.

(4) The responsible person or, where the incident occurred in the course of that person's employment, his or her employer, must, as soon as reasonably practicable after knowledge of the incident

- (a) take all reasonable measures to contain and minimise the effects of the incident, including its effects on the environment and any risks posed by the incident to the health, safety and property of persons;
- (b) undertake clean-up procedures;
- (c) remedy the effects of the incident;
- (d) assess the immediate and long-term effects of the incident on the environment and public health;

(5) The responsible person or, where the incident occurred in the course of that person's employment, his or her employer, must, within 14 days of the incident, report to the Director-General, provincial head of department and municipality such information as is available to enable an initial evaluation of the incident, including

- (a) the nature of the incident;
- (b) the substances involved and an estimation of the quantity released and their possible acute effect on persons and the environment and data needed to assess these effects;
- (c) initial measures taken to minimise impacts;
- (d) causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure; and
- (e) measures taken and to be taken to avoid a recurrence of such incident.

(6) A relevant authority may direct the responsible person to undertake specific measures within a specific time to fulfil his or her obligations under subsections (4) and (5): Provided that the relevant authority must, when considering any such measure or time period, have regard to the following:

- (a) the principles set out in section 2;
- (b) the severity of any impact on the environment as a result of the incident and the costs of the measures being considered;
- (c) any measures already taken or proposed by the person on whom measures are to be imposed, if applicable;
- (d) the desirability of the state fulfilling its role as custodian holding the environment in public trust for the people;
- (e) any other relevant factors.

(7) A verbal directive must be confirmed in writing at the earliest opportunity, which must be within seven days.

(8) Should

(a) the responsible person fail to comply, or inadequately comply with a directive under subsection (6);

(b) there be uncertainty as to who the responsible person is; or

(c) there be an immediate risk of serious danger to the public or potentially serious detriment to the environment,

a relevant authority may take the measures it considers necessary to

(i) contain and minimise the effects of the incident;

(ii) undertake clean-up procedures; and

(iii) remedy the effects of the incident.

(9) A relevant authority may claim reimbursement of all reasonable costs incurred by it in terms of subsection (8) from every responsible person jointly and severally.

(10) A relevant authority which has taken steps under subsections (6) or (8) must, as soon as reasonably practicable, prepare comprehensive reports on the incident, which reports must be made available through the most effective means reasonably available to

(a) the public;

(b) the Director-General;

(c) the South African Police Services and the relevant fire prevention service;

(d) the relevant provincial head of department or municipality; and

(e) all persons who may be affected by the incident

See below for a template of an Incident Report to serve as a guideline for the recording and addressing of emergency incidents as and when they occur.

Document Type:	Emergency Incident Report		
	Title:	(PROPERTY WHERE INCIDENT OCCURRED, DATE AND TYPE OF INCIDENT)	
	Document Status:	Pilot reporting format	
Reference:	[A reference that may be used in future correspondence]	Initial Submission Date:	[Date of initial submission of the report to the Department: Environmental Affairs and Tourism]
Revision No.:	example	Compiled by:	[Full name and contact details of the person submitting the report]

This form provides a template for the emergency incident report required in terms of section 30(5) of the National Environmental Management Act (Act No. 107 of 1998) (hereinafter "NEMA") in which the responsible person or, where the incident occurred in the course of that person's employment, his or her employer, must, within 14 days of the incident, report to the Director General, provincial head of department and municipality such information as is available to enable an initial evaluation of the incident, including: (a) the nature of the incident; (b) the substances involved and an estimation of the quantity released and their possible acute effect on persons and the environment and data needed to assess these effects; (c) initial measures taken to minimise impacts; (d) causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure; and (e) measures taken and to be taken to avoid a recurrence of such incident.

In terms of section 30(1)(a) of NEMA, an "incident" means an unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed.

In line with section 24 of the Constitution of the Republic of South Africa (Act No. 108 of 1996), "serious" is taken to be a measure of the impact of an incident where such an incident has had, could have had, is having, or will have a negative impact on human health or well-being.

RESPONSIBLE PERSON			
In terms of section 30(1)(b) of NEMA, the "responsible person" includes any person who: (i) is responsible for the incident; (ii) owns any hazardous substance involved in the incident; or (iii) was in control of any hazardous substance involved in the incident at the time of the incident			
Name:	[Full name of person, company, etc.]	Designation:	[designation of responsible person (n/a for companies, etc.)]
Postal Address:	[Full postal address including postal code]	Physical Address:	[Full physical address]
Telephone (B/H)	[Business hours contact telephone number and area code]	Telephone (A/H)	[After hours contact telephone number and area code]
Nature of Business:	[Brief summary of the nature of the business]		

EMERGENCY INCIDENT SUMMARY INFORMATION							
Mark the appropriate boxes							
Fire:		Spill:		Explosion:		Gaseous Emission:	
Injuries		Reportable injuries:		Hospitalisation:		Fatalities:	
Open water impacts:		Ground water impacts:		Atmospheric impacts:		Soil impacts:	
Own emergency response involved		Fire prevention services involved		Government hazardous materials emergency response involved		More than 1 governmental emergency response service involved	
Emission of non-toxic substances at low concentrations		Emission of non-toxic substances at high concentrations		Emission of toxic substances at low concentrations		Emission of toxic substances at high concentrations	
No evacuation required		Immediate area evacuated		Immediate surrounds evacuated		Evacuation of the general public	

INITIAL EMERGENCY INCIDENT REPORT				
<p>In terms of section 30(3) of NEMA, the responsible person or, where the incident occurred in the course of that person's employment, his or her employer must forthwith after knowledge of the incident, report through the most effective means reasonably available: (a) the nature of the incident; (b) any risks posed by the incident to public health, safety and property; (c) the toxicity of substances or byproducts released by the incident; and (d) any steps that should be taken in order to avoid or minimise the effects of the incident on public health and the environment to: (i) the Director General; (ii) the South African Police Services and the relevant fire prevention service; (iii) the relevant provincial head of department or municipality; and (iv) all persons whose health may be affected by the incident.</p>				
Description	Date:	Time:	Medium:	Contact Details:
Director General:	[submission date]	[submission time]	[Fax, phone, SMS, letter, etc.)	[who was the report made to?]
SAPS:				
Relevant fire prevention service:				
Relevant province or municipality				
Affected persons:			Provide details of who was contacted and how they were contacted as Annexure A to this report	

INCIDENT DETAILS			
In terms of NEMA section 30(5)(a) and (d), the responsible person must report on the nature of the incident as well as the causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure			
Incident start time:	[The exact time that the unexpected event started]	Incident duration:	[the duration of the unexpected event]
Duration of danger:	[The time taken from the start of the event to the time when the impacts of the event no longer posed a threat to anyone's health or well-being]	Duration of exposure:	[The duration of conditions that had a direct impact anyone's health or well-being]
Incident description	[Brief description of the incident detailing, but not limited to, a description of: (i) what happened; (ii) how it happened; (iii) where it happened; (iv) the timing and sequence of events; and (v) why it happened. A detailed discussion may be included as an annex.]		
	Plans, diagrams, maps or any other graphical material relating to the incident description must be attached as annexures B1, B2, etc.		
Wind speed and direction	[The wind speed and direction at the point of the incident at the time of the incident]	Ambient air temperature	[ambient air temperature at the time of the incident]
Weather conditions	[Sunny, light rain, mist, heavy rain, etc.]	Other relevant meteorological conditions	[Temperature inversion, floods, etc]

POLLUTANTS RELEASED DURING INCIDENT					
In terms of NEMA section 30(5)(b), the responsible person must report on the substances involved and an estimation of the quantity.					
List all the pollutants directly released during the incident (i.e. exclude those pollutants that resulted from mitigation measures, e.g. flaring, treatment, dilution etc.)					
Substance or mixture of substances	Reference Number	Phase	Total Quantity emitted	Unit	Nature of emission
[The name recognised by any national or internationally recognised chemical referencing system]	[Reference to any national or internationally recognised chemical referencing system]	[solid, semi-solid, liquid or gas]	[the total measured or estimated quantity released into the environment]	[the unit of measure in respect to the quantity]	[emitted from truck, underground pipe, stack, etc.]

SECONDARY POLLUTANTS RESULTING FROM INCIDENT

In terms of NEMA section 30(5)(b), the responsible person must report on the substances involved and an estimation of the quantity released.

List all the pollutants that resulted from mitigation measures, e.g. flaring, treatment, dilution etc.

Substance or mixture of substances	Reference Number	Phase	Total Quantity emitted	Unit	Nature of emission
[The name recognised by any national or internationally recognised chemical referencing system]	[Reference to any national or internationally recognised chemical referencing system]	[solid, semi-solid, liquid or gas]	[the total measured or estimated quantity released into the environment]	[the unit of measure in respect to the quantity]	[emitted from truck, underground pipe, stack, etc.]

1. POLLUTANT CONCENTRATIONS

In terms of NEMA section 30(5)(b), the responsible person must report on the substances involved and an estimation of the quantity released.

List all the pollutants detailed in sections **Error! Reference source not found.** and **Error! Reference source not found.** **Error! Reference source not found.**

1.1 Substance or mixture of substances	1.2 Reference Number	1.3 Estimated pollutant concentration				1.7 Concentration unit (e.g. ppm)
		1.4 10m	1.5 100m	1.6 500m		
[The name recognised by any national or internationally recognised chemical referencing system]	[Reference to any national or internationally recognised chemical referencing system]	[estimate the concentration of the pollutant in water, soil and/or air within a 10m radius of the epicentre of the incident]	[estimate the concentration of the pollutant in water, soil and/or air within a 100m radius of the epicentre of the incident]	[estimate the concentration of the pollutant in water, soil and/or air within a 500m radius of the epicentre of the incident]	[[Provide the unit of concentration used in columns 1.4, 1.5 and 1.6.]	

INCIDENT IMPACT	
In terms of NEMA section 30(5)(b), the responsible person must report on possible acute effect on persons and the environment and data needed to assess these effects;	
Minor injuries	[Describe the number and types of any minor injuries that resulted from the incident or efforts to manage the incident or the impacts thereof]
Reportable injuries	[Describe the number and types of any injuries requiring statutory reporting that resulted from the incident or efforts to manage the incident or the impacts thereof]
Hospitalisation	[Describe the number and types of any injuries that required professional medical care that resulted from the incident or efforts to manage the incident or the impacts thereof]
Fatalities	[Describe the number and cause of any fatalities that resulted from the incident or efforts to manage the incident or the impacts thereof]
Biological impacts	[Describe any impacts on biological life, other than human life, e.g. fish kills, plant mortality, etc.]
Impact area	[Describe the area possibly affected by the incident or the impacts thereof including: (i) size of the area; (ii) socio-economic context; (iii) population density; (iv) sensitive environments (if any), etc.]
Data	Attach relevant impact reports, medical reports, death certificates, post mortem reports, environmental monitoring data, etc. as Annexes C1, C2,... to this report

EXISTING PREVENTION PROCEDURES AND/OR SYSTEMS	
Foresight	[Briefly describe whether the incident could have, or had, been foreseen, e.g. was it included in any environmental impact assessment, risk assessment, health and safety plan, etc.]
Procedures and/or systems	Attach any relevant safety, health and environmental plans (including any statutory planning requirements) that detail what actions should be taken in the event of the incident that is the subject of this report
Procedure and/or systems failures	[Describe any failures or shortfalls in procedures and/or systems that may have contributed to the incident]
Technical measures	[Describe any technical measures, equipment, 'fail-safe' devices, etc. that are in place to prevent the occurrence of the incident]
Technical failure	[Describe any failures of technical measures, equipment, 'fail-safe' devices, etc. that are in place to prevent the occurrence of the incident]

2. INITIAL INCIDENT MANAGEMENT	
In terms of NEMA section 30(5)(c), the responsible person must report on initial measures taken to minimise impacts.	
2.1 Evacuation	[Describe any evacuation activities including information on the number of people evacuated and whether these people were staff or otherwise]
2.2 Technical measures	[Describe all technical measures taken to address the incident]
2.3 Mitigation measures	[Describe all measures taken to minimise the impact]
2.4 Emergency Services	[Describe any governmental emergency services involvement]

3. CLEANUP AND/OR DECONTAMINATION			
In terms of NEMA section 30(5)(c), the responsible person must report on initial measures taken to minimise impacts.			
3.1 Cleanup and/or decontamination	[Provide a detailed description of all cleanup and/or decontamination activities and the environmental quality and impacts resulting from these activities as well as contact details for any contracted service providers in an annex.]		
Permissions and Instructions			
Provide details of any permissions and/or instructions received from any organ of state during initial incident management, cleanup and/or decontamination			
3.2 Type	3.3 Statute	3.4 Issued By	3.5 Details
[Describe the nature or type of permission or instruction]	[Provide a reference to the legal mandate for the permission or instruction]	[Provide contact details for the permitting or instructing authority]	[provide a summary of the activities carried out in terms of the permission or instruction]

MITIGATION MEASURES			
In terms of NEMA section 30(5)(e), the responsible person must report on measures taken and to be taken to avoid a recurrence of such incident.			
Measure	Objective	Cost	Timing
[Briefly describe each of the measures taken, and to be taken, to avoid a recurrence of such incident]	[Briefly describe the objective of the measure, i.e. the desired outcome of the measure]	[Estimate the cost of the measure in terms of capital costs and/or recurrent costs]	[Provide information on the timing for the full implementation of the measure]

4. AUTHORISATIONS

Provide detail on all authorisations (including permits, licenses, certificates, etc.) in respect of the activity to which the incident relates.

4.1 Type	4.2 Statute	4.3 Issued By	4.4 Issue & Expiry Date
[Describe the nature or type of authorisation, e.g. Registration Certificate]	[Provide the reference for the authorisation, e.g. section X of the National Environmental Management Act (Act No. 107 of 1989)]	[Provide contact details for the issuing authority]	[provide the date of issue and expiry]

HISTORY

Provide details on any and every similar incident involving the responsible person in the last 24 months. Similar incidents include those that: (i) involved similar circumstances; (ii) involved similar emissions; (iii) involved similar personal; and/or (iv) involved similar impacts.

Incident title	Report reference	Date of incident	Summary of event
[Provide the title used in the relevant emergency incident report]	[Provide the reference in respect of the relevant emergency incident report]	[Date of incident]	[Provide a summary of the event]

Signed by, or as a mandated signatory for, the responsible person:		Date:	
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CHAPTER 9

DECOMMISSIONING PHASE

As the final phase in the project cycle, decommissioning may present positive environmental opportunities associated with the return of the land for alternative use and the cessation of impacts associated with operational activities. However, depending on the nature of the operational activity, the need to manage risks and potential residual impacts may remain well after operations have ceased.

The decommissioning phase EMP provides specific guidance with respect to the management of the environmental risks associated with the decommissioning stage of a project.

Closure and decommissioning impacts are likely to be similar to the construction phase impacts. The management actions and control under the construction phase EMP need to be implemented to mitigate the negative impacts on the environment and to restore the property to its natural state.

A decommissioning phase is where a structure is removed or otherwise modified to make it incapable for re-use for the original design purpose.

The results of environmental monitoring during the decommissioning phase will be used to assess the impact of the decommissioning on the surrounding environment and demonstrate compliance with regulatory requirements.

The actual scope of the decommissioning environmental monitoring will be established following consultation with the regulatory authorities. The format of decommission management strategy will probably be similar to that of earlier development phases and consist of the following:

- Management Principles
 - Develop monitoring procedures in accordance with standard protocols and the requirements of the environmental legislation.
 - Undertake environmental monitoring during the decommissioning phase as shown below.

Environmental monitoring during the decommission phase will include indigenous aquatic and terrestrial habitats rehabilitation monitoring.

CHAPTER 10

REHABILITATION SPECIFICATIONS AND SITE CLEAN-UP

The contractors must ensure that all temporary structures, equipment, materials and facilities used or created on site for, or during construction activities, are removed once the project has been completed. The construction sites must be cleared, and cleaned to the satisfaction of the developer.

Stabilisation and rehabilitation must take place immediately after construction/maintenance operations have been completed. No vehicles or unauthorised personnel must be allowed onto areas that have been rehabilitated.

The areas impacted during construction/maintenance must be stabilised and shaped according to the natural surrounding contours. If topsoil was removed the topsoil must be used to stabilise the impacted areas.

The impacted areas must be re-vegetated with indigenous vegetation species within 3 months after completion of construction/maintenance activities. Rehabilitated areas must be irrigated as and if required to ensure successful establishment of planted indigenous vegetation.

The rehabilitation of the site must ensure that the final conditions of the site is environmentally acceptable and that there will be no adverse long term effects on the surrounding environment especially the water resources.

CHAPTER 11

ENVIRONMENTAL AWARENESS INDUCTION COURSE MATERIAL

This section of the report is included in compliance with Section 24N (3) (c) of the National Environmental Management Act 107 of 1998.

WHAT IS THE ENVIRONMENT?

- Soil
- Water
- Plants
- People
- Animals
- Air we breathe



the oceans

• Air, plants, cars &

WHY MUST WE LOOK AFTER THE ENVIRONMENT?

- It affects us all as well as future generations
- We have a right to a healthy environment
- A Policy and System will be signed

HOW DO WE LOOK AFTER THE ENVIRONMENT?

- Report problems to your supervisor/ foreman
- Team work
- Follow the rules in the EMP



WORKING AREAS

Workers & equipment must stay inside the site boundaries at all times



RIVERS & STREAMS

- Do not swim in or drink from streams
- Do not throw oil, petrol, diesel, concrete or rubbish in the stream
- Do not work in the stream without direct instruction
- Do not damage the banks or vegetation of the stream



ANIMALS

- Do not injure or kill any animals on the site
- Ask your supervisor or Contract's Manager to remove animals found on site



TREES AND FLOWERS

- Do not damage or cut down any trees or plants without permission
- Do not pick flowers



SMOKING AND FIRE

- Put cigarette butts in a rubbish bin
- Do not smoke near gas, paints or petrol
- Do not light any fires without permission
- Know the positions of fire fighting equipment
- Report all fires
- Do not burn rubbish or vegetation without permission



PETROL, OIL AND DIESEL

- Work with petrol, oil & diesel in marked areas
- Report any petrol, oil & diesel leaks or spills to your supervisor
- Use a drip tray under vehicles & machinery
- Empty drip trays after rain & throw away where instructed



DUST

Try to avoid producing dust



NOISE

- Do not make loud noises around the site, especially near schools and homes
- Report or repair noisy vehicles



TOILETS

- Use the toilets provided
- Report full or leaking toilets



EATING

- Only eat in demarcated eating areas
- Never eat near a river or stream
- Put packaging & leftover food into rubbish bins



RUBBISH

- Do not litter – put all rubbish (especially cement bags) into the bins provided
- Report full bins to your supervisor
- The responsible person should empty bins regularly



TRUCKS AND DRIVING

- Always keep to the speed limit
- Drivers - check & report leaks and vehicles that belch smoke
- Ensure loads are secure & do not spill



EMERGENCY PHONE NUMBERS

Know all the emergency phone numbers:

- Ambulance:
- Fire:
- Police: 10111



FINES AND PENALTIES

- Spot fines of between R20 and R2000
- Your company may be fined
- Removal from site
- Construction may be stopped



PROBLEMS - WHAT TO DO!

- Report any breaks, floods, fires, leaks and injuries to your supervisor
- Ask questions!



CHAPTER 12

COMPLIANCE WITH THE ENVIRONMENTAL AUTHORISATION

All conditions of the Environmental Authorisation must be adhered to onsite during the construction-, operational-, decommissioning- and rehabilitation phases of the proposed project. A copy of the Environmental Authorisation must be available on site together with the EMP and all contractors on site must sign the Declaration of Understanding as proof of awareness and understanding of all the conditions to be adhered to on site in terms of the EA and EMP.

CHAPTER 13

UPDATING/ADAPTING THE EMP

Although care has been taken to address all known relevant environmental issues for the development, it will become necessary to add or amend certain procedures or instructions to improve the efficiency of the EMP. Only those additions to, or amendments of, this EMP that will either improve environmental protection or can be proven not to have any negative effects would be considered to be included, and any amendments to the EMP must first be approved by the ECO and competent authority/ies i.e. DEA&DP.

REFERENCES

City of Cape Town (2002) Environmental Management Programme (Version 5) for Civil Engineering Construction Activities.

DEA&DP: Environmental Management Programme. Version 5 (04/2002). Guideline Document for the ECO / ESO and the ER

Department of Water Affairs and Forestry, February 2005. Environmental Best Practice Specifications: Construction Integrated Environmental Management Sub-Series No. IEMS 1.6. Third Edition. Pretoria.