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DRAFT

PRE-CONSTRUCTION, CONSTRUCTION AND POST-CONSTRUCTION PHASE

ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR THE

PROPOSED INSTALLATION OF SERVICES ASSOCIATED WITH THE KOEBERG NUCLEAR POWER STATION, DUYNEFONTEIN, CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY, WESTERN CAPE PROVINCE.

APPLICANT:	ESKOM HOLDINGS SOC LTD.
ENVIRONMENTAL ASSESSMENT PRACTITIONER:	SHARPLES ENVIRONMENTAL SERVICES CC RESPONSIBLE EAP: MADELEINE KNOETZE (EAPASA REG: 2021/3230) OVERSEEING EAP: BETSY DITCHAM (EAPASA REG: 2020/1480)
DFFE PROJECT REFERENCE:	TBC
SES REFERENCE NUMBER:	CT05/KNPI/DEMPR/08/25
DATE:	14 August 2025

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APPENDIX 4 OF THE EIA REGULATIONS 2014 (AS AMENDED 2017).

This Environmental Management Programme has been drafted in accordance with Appendix 4 of the Environmental Impact Assessment Regulations 2014 (as amended 2017). The table below shows how the requirements of Appendix 4 have been included within this Environmental Management Programme.

(1) An EMPr must comply with section 24N of the Act and include— (a)details of– (i)the EAP who prepared the EMPr; and (ii)the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Appendix A
(b)a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Appendix B - E
(c)a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Appendix C
(d)a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including— (i)planning and design; (ii)pre-construction activities; (iii)construction activities; (iv)rehabilitation of the environment after construction and where applicable post closure; and (v)where relevant, operation activities;	Section 6 - 10
(f)a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to — (i)avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii)comply with any prescribed environmental management standards or practices; (iii)comply with any applicable provisions of the Act regarding closure, where applicable; and (iv)comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	
(g)the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	
(h)the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	
(i)an indication of the persons who will be responsible for the implementation of the impact management actions;	
(j)the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	
(k)the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 11 -12 Appendix H
(l)a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	
(m)an environmental awareness plan describing the manner in which— (i)the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii)risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 14 Appendix C
(n)any specific information that may be required by the competent authority.	

COMPLIANCE WITH SECTION 24N OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, AS AMENDED (ACT 107 OF 1998)

(1) The Minister, the Minister of Minerals and Energy, an MEC or identified competent authority may require the submission of an environmental management programme before considering an application for an environmental authorisation.	This Environmental Management Programme (EMPr) has been compiled in accordance with the requirements of the Environmental Impact Assessment Regulations and is currently being circulated for public review purposes.
(1A) Where environmental impact assessment has been identified as the environmental instrument to be utilised in informing an application for environmental authorisation, or where such application relates to prospecting, mining, exploration, production and related activities on a prospecting, mining, exploration or production area, the Minister, the Minister of Minerals and Energy, an MEC or identified competent authority must require the submission of an environmental management programme before considering an application for an environmental authorisation.	
(2) The environmental management programme must contain-	
(a) information on any proposed management, mitigation, protection or remedial measures that will be undertaken to address the environmental impacts that have been identified in a report contemplated in subsection 24(1A), including environmental impacts or objectives in respect of- *(i) planning and design;* *(ii) pre-construction and construction activities;* *(iii) the operation or undertaking of the activity in question;* *(iv) the rehabilitation of the environment; and* *(v) closure, if applicable;*	Sections 7, 8, 0 and 10
(b) details of- *(i) the person who prepared the environmental management programme; and* *(ii) the expertise of that person to prepare an environmental management programme;*	Section 4
(c) a detailed description of the aspects of the activity that are covered by the environmental management programme;	Section 5
(d) information identifying the persons who will be responsible for the implementation of the measures contemplated in paragraph (a);	Section 11 Appendix E
(e) information in respect of the mechanisms proposed for monitoring compliance with the environmental management programme and for reporting on the compliance;	
(f) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of any listed activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and	Sections 7, 8, 0 and 10
(g) a description of the manner in which it intends to- *(i) modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;* *(ii) remedy the cause of pollution or degradation and migration of pollutants; and* *(iii) comply with any prescribed environmental management standards or practices*	Sections 7, 8, 0 and 10
(3) The environmental management programme must, where appropriate-	
(a) set out time periods within which the measures contemplated in the environmental management programme must be implemented;	Section 6 - 10
(b) contain measures regulating responsibilities for any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of prospecting or mining operations or related mining activities which may occur inside and outside the boundaries of the prospecting area or mining area in question; and	Section 11 and 12 Appendix E
(c) develop an environmental awareness plan describing the manner in which- *(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and* *(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment.*	Sections 13 and 14
(4) The Minister of Minerals and Energy may not grant an environmental authorisation, unless he or she has considered any recommendation by the Regional Mining Development and Environmental Committee	Not applicable to the project
(5) The Minister, the Minister of Minerals and Energy, an MEC or identified competent authority may call for additional information and may direct that the environmental management programme in question must be adjusted in such a way as the Minister, the Minister of Minerals and Energy or the MEC may require.	All comments obtained from Stakeholders will be incorporated into this document upon conclusion of the Public Participation Process.
(6) The Minister, the Minister of Minerals and Energy, an MEC or identified competent authority may at any time after he or she has approved an application for an environmental authorisation approve an amended environmental management programme.	Not applicable to the project at this stage

(7) The holder and any person issued with an environmental authorisation-	
(a) must at all times give effect to the general objectives of integrated environmental management laid down in section 23 (Of the NEMA);	Section 12 Appendix E
(b) must consider, investigate, assess and communicate the impact of his or her prospecting or mining on the environment;	
(c) must manage all environmental impacts- *(i) in accordance with his or her approved environmental management programme, where appropriate; and* *(ii) as an integral part of the reconnaissance, prospecting or mining, exploration or production operation, unless the Minister of Minerals and Energy directs otherwise;*	
(d) must monitor and audit compliance with the requirements of the environmental management programme;	
(e) must, as far as is reasonably practicable, rehabilitate the environment affected by the prospecting or mining operations to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and	
(f) is responsible for any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of his or her prospecting or mining operations or related mining activities which may occur inside and outside the boundaries of the prospecting or mining area to which such right or permit relates.	

1. DOCUMENT DETAILS

SES Project Ref. No:	CT05
Conditions of Use:	This report is the property of the sponsor, *Sharples Environmental Services cc* (*SES*), who may make allowance to publish it, in whole provided that: Approval for copy is obtained from *SES*. *SES* is acknowledged in the publication. *SES* is indemnified against and claim for damages that may result from publication of specifications, recommendations or statements that is not administered or controlled by *SES*. That approval is obtained from *SES* if this report is to be used for the purposes of sale, publicity or advertisement. *SES* accepts no responsibility for failure to follow the recommended program.
Disclaimer	**This Environmental Management Programme has been compiled in line with Appendix 4 of Environmental Impact Assessment (EIA) Regulations of 2014, as amended (GNR 326 of 2017). This EMPr has been submitted to the Competent Authority as part of the EIA process followed in terms of the EIA Regulations of 2014, as amended. Even though numerous renditions of this report exist, this report (in its final state), aims to replace any other version of this document, upon authorisation of the project by the Department of Forestry, Fisheries & Environment (DFFE).* **All technical developmental information contained in this EMPr was provided by Eskom Holdings SOC Ltd and SES does not take any responsibility regarding the accuracy of the information.* **This EMPr and the preliminary impacts identified is based on the expected sensitivity of the receiving environment based on the observations made by the appointed Environmental Assessment Practitioner (EAP) and the specialists qualified to make such interpretations.*

2. ABOUT THIS EMPR

This document is intended to serve as an implementing guideline to be used by *ESKOM Holdings SOC Ltd* during the pre-construction, construction, and post-construction/rehabilitation phases of the proposed cable infrastructure upgrade project. This document provides measures that must be implemented to ensure that any environmental degradation that may be associated with the proposed project is avoided, or where such impacts cannot be avoided entirely, are minimised and mitigated appropriately.

This Environmental Management Programme (EMPr) has been prepared in accordance with the Appendix 4 of the Environmental Impact Assessment (EIA) Regulations of 2014, as amended (Government Notice Regulation [GNR] 326 of 2017; GNR 517 of 2021), which stipulates the minimum requirements of an EMPr, Section 24N of the National Environmental Management Act, 1998, as amended (Act No. 107 of 1998), and with reference to the "Guidelines for Environmental Management Programmes" published by the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP, 2005).

In line with the mitigation hierarchy (see Figure 1), the overarching goal of this EMPr is to anticipate and provide measures that must be implemented to ensure that any environmental impact that may be associated with the development is avoided. Where such impacts cannot be avoided entirely, such environmental impacts must be minimised and mitigated appropriately. The mitigation hierarchy was considered during the BAR planning process, to appropriately manage environmental impacts.

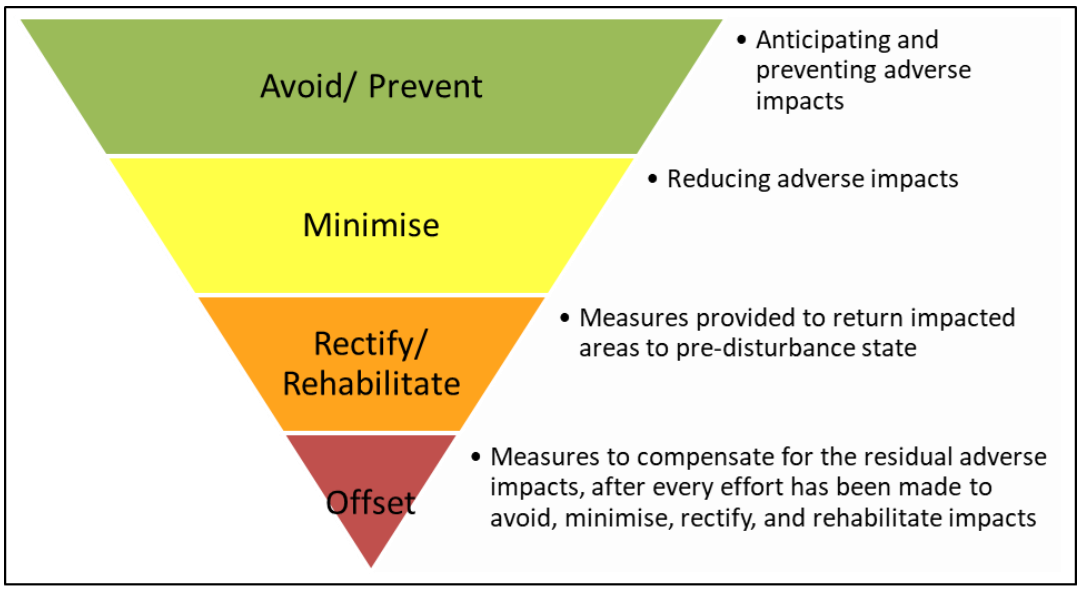

Figure 1. Mitigation hierarchy

It is important to note that not only is the EMPr designed to manage the physical establishment of the development *per se*, but also acts as a tool which can be used to manage the environmental impacts of the proposed cable infrastructure upgrade project.

The rehabilitation, mitigation, management and monitoring measures prescribed in this EMPr must be seen as binding to the *Proponent*, and any person acting on its behalf, including but not limited to agents, contractors, employees, associates, guests or any person rendering a service to the development site.

2.1. Environmental legislative requirements of the proposed infrastructure

The EIA Regulations of 2014, as amended (GNR 326 of 2017; GNR 517 of 2021), as promulgated in terms of the National Environmental Management Act, 1998 (NEMA; Act No. 107 of 1998), as per gives effect to the Constitution of the Republic of South Africa by providing a framework for co-operative environmental governance and the environment. NEMA requires that an environmental authorisation (EA) be issued by a competent authority (CA) before the commencement of an activity listed in terms of the EIA Regulations of 2014, as amended.

Since this development proposal triggered listed activities in terms of the EIA Regulations of 2014, as amended, in terms of Listing Notice 1 and 3 of 2014, as amended, a Basic Assessment Process was undertaken. This EMPr acts as a standalone document submitted with the Basic Assessment Report submitted to the Department of Forestry, Fisheries & Environment (DFFE) for the purpose of obtaining Environmental Authorisation.

The following listed activities will be triggered in terms of the relevant Listing Notices:

Table 1. Listed Activities triggered in terms of Listed Notice 1 and 3 of 2014, as amended.

Activity #	Listing Notice 1. Description of Activity as per GN No. R 327	Reason for Listing
17	The development (v) if no development setback exists, within a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is greater; in respect of – (e) infrastructure or structures with a development footprint of 50 square metres or more.	The proposed project extent infringes on the 100 m high water mark of the Atlantic Ocean (located toward the West of the Koeberg Nuclear Power Station). As the exact location of the infrastructure to be unearthed is not known, there is a possibility that the construction activities will exceed the threshold of this activity.
19A	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (ii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is greater.	The proposed project extent infringes on the 100 m high water mark of the Atlantic Ocean (located toward the West of the Koeberg Nuclear Power Station). As the exact location of the infrastructure to be unearthed is not known, there is a possibility that the proposed project will see to the movement of material.
27	The Clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.	The proposed project will see to the clearance of an area of up to 6.1 ha of indigenous vegetation within the boundaries of the Koeberg Nuclear Power Station (this includes a section between the inner boundary fence and the outer boundary fence (approximately 1.9 ha) that has been cleared, and allowed to revegetate).
Activity	**Listing Notice 3. Description of Activity as per GN No. R 324**	**Reason for listing**
12	The **clearance of an area of 300m² or more of indigenous vegetation** except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance plan. (i) In Western Cape: (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment, 2004; (iii) Within the littoral active zone or 100m inland from the high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; or	The proposed project will see to the clearance of an area of up to 6.1 ha of indigenous vegetation within the boundaries of the Koeberg Nuclear Power Station (this includes a section between the inner boundary fence and the outer boundary fence (approximately 1.9 ha) that has been cleared, and allowed to revegetate). The project is located within an area mapped as an endangered ecosystem (Cape Flats Strandveld) and is partially located within 100 metres inland from the high-water mark of the sea.

2.2. Important caveat to the report

In the past, some developments have had a devastating impact on the environment even though they have had EMPrs in place, while other developments have had a low impact even though no management plans have been compiled.

The Implementing Agent and the attitude of the construction team play an integral role in determining the impact a development will have on the environment. The independent Environmental Control Officer (ECO) needs to ensure that all role-players are aware of the constraints that the EMPr places on the development and the construction team and are prepared to be actively involved in implementing these constraints. The end result relies on co-operation, mutual respect and understanding of all parties involved.

3. HOW TO USE THIS DOCUMENT

It is essential that this EMPr be carefully studied, understood, implemented, and adhered to as far as reasonably possible, throughout all phases of the proposed cable infrastructure upgrade project. The *Proponent* must retain a copy of this EMPr, and an additional copy must be kept on site at all times during the pre-construction, construction and post-construction / rehabilitation phases of the proposed upgrade project.

This EMPr must be included in all contracts compiled for engineers, contractors and subcontractors employed by the *Proponent*, as this EMPr identifies and specifies the procedures to be followed by engineers and other contractors to ensure that the adverse impacts of construction and maintenance activities are either avoided or reduced. Appointed contractors must make adequate financial provision to implement the environmental management measures specified in this document.

This EMPr must be seen as a working document, which may be amended as and when needed accommodate changing circumstances on site or in the surrounding environment, or to accommodate requests/ conditions issued by the DFFE. Amendments to this EMPr must first be approved by the Competent Authority, in writing, before being implemented.

4. DETAILS OF THE EAP & TECHNICAL/SPECIALIST INPUT

This EMPr was compiled by Sharples Environmental Services cc (SES). SES was established in 1998 and has been actively engaged in the fields of environmental planning, assessment and management. SES advises on private, corporate and public enterprises on a variety of differing land use applications ranging from large-scale residential estates and resorts to golf courses, municipal service infrastructure installations and the planning of major arterials. Our consultants have over 20+ years of combined experience and we operate in the Southern, Eastern and Western Cape regions.

A brief description of the Environmental Assessment Practitioners (EAP) has been included below, as per Table 1, and a detailed Curriculum Vitae has been included in Appendix A.

Table 1: EAP Details.

Role:	Name:	E-Mail Address:	Qualifications:	Registration/ Memberships	YEARS OF EXPERIENCE
Responsible EAP	Ms. Madeleine Knoetze	madeleine@sescc.net	B.Sc. Environmental Sciences (Geology and Geography) (NMMU)	IAIA (SA) EAPASA (Reg nr. 2021/3230)	10+ years
Overseeing EAP	Mrs. Betsy Ditcham	betsy@sescc.net	B.Sc. Honours (Wildlife Management) (UP) B.Sc (Zoology and Ecology (UCT)	IAIA (SA) EAPASA (Reg Nr. : 1480)	16+ years

Table 2 below provides a summary of the specialists appointed verify the sensitivity of the proposed Area of Investigation.

Table 2: Environmental Specialist Input.

Environmental Theme	Specialist Company Name	Specialist Name	Registration Nr.
Aquatic Biodiversity	Upstream Consulting	Debbie Fordham	SACNASP: 119102
Terrestrial Biodiversity Plant Species	Bergwind Botanical Surveys and Canopy Tours cc	Dave McDonald	SACNASP: 400094/06
Animal Species	Blue Skies Research	Dr. Jacobus Visser	SACNASP: 128018
Agriculture Sensitivity	Johann Lanz Soil Scientist	Johann Lanz	SACNASP: 400268/12
Cultural Heritage and Archaeological Theme	Agency for Cultural Resource Management (ACRM)	NID to be submitted by: Jonathan Kaplan	ASAPA CRM Membership No. 64 in Good Standing
Palaeontological			

5. DESCRIPTION OF THE ACTIVITY

As indicated in the introductory paragraph of this BAR, construction on the Eskom Koeberg Nuclear Power Station (KNPS) began in the 1970s, with the commissioning of the plant components starting in 1984. As part of the construction of the plant, services were installed to allow connectivity between the various portions of the plant. The Applicant proposes to unearth and upgrade the services located in a specific portion of the plant (referred to as the Area of Investigation for the purpose of the compilation of this report), located North of the reactors, to the modern standard for construction and safety requirements.

As recording of infrastructure installation was not standardised in the 1980s, the unearthing of services will prove to be challenging as, although marked, the exact location of infrastructure is not known.

Therefore, as part of the modernisation and upgrading of the infrastructure, vegetation would have to be sporadically cleared within a predetermined area. The proposed installation is located in an area identified as Cape Flats Dune Strandveld, listed as an Endangered Ecosystem, in terms of the List of Ecosystems that are Threatened and in need of Protection, promulgated by the Department of Forestry, Fisheries and Environment (DFFE) and will potentially be partially located within 100 m of the highwater mark of the Atlantic Ocean.

The following infrastructure will be installed as part of the activities associated with the proposed cable infrastructure upgrades:

- Electrical cables with a transmission capacity of 48V, 22V and 380V; and
- Fibreoptic cables to service the security cameras of the plant.

The proposed project will be located on the Farm Duynefontyn 1552, Duynefontein, City of Cape Town Metropolitan Municipality, Western Cape Province.

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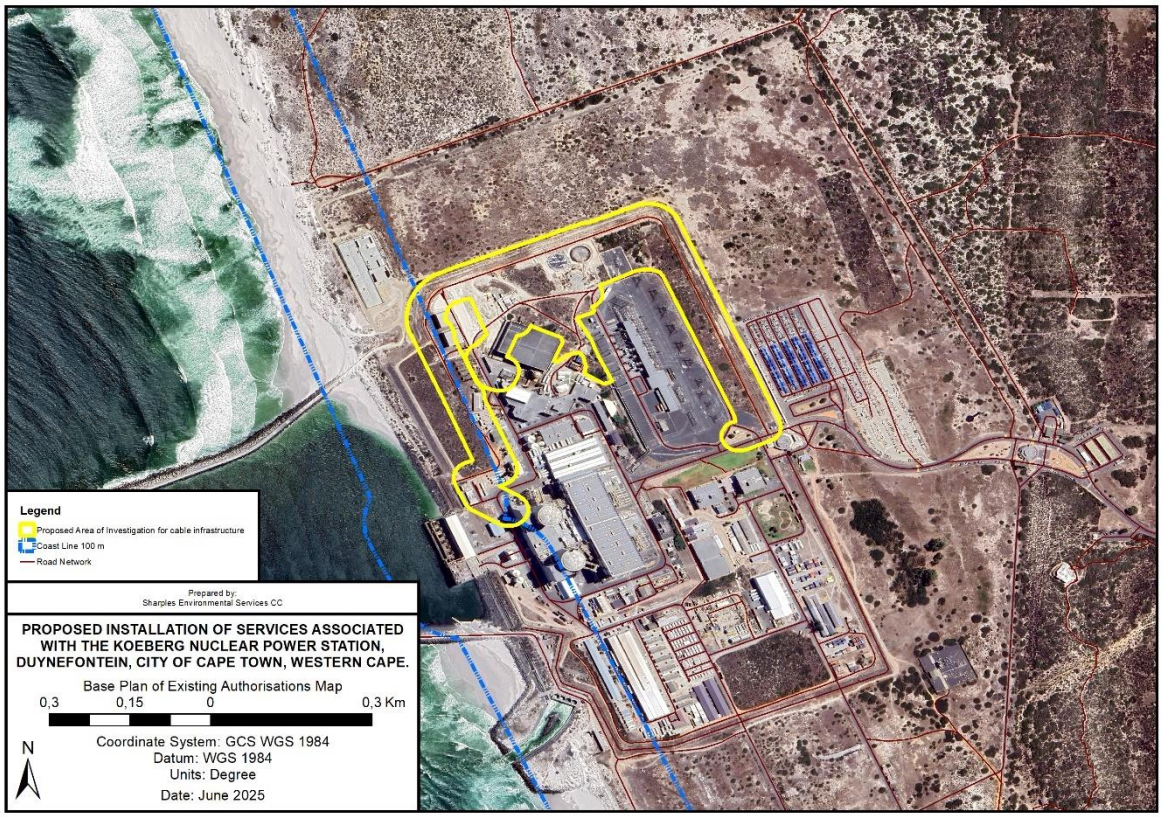

Figure 2. Proposed cable infrastructure project Area of Investigation upon.

6. GENERAL ENVIRONMENTAL MANAGEMENT

The following general management measures are intended to protect environmental resources from pollution and degradation during all phases of the project life cycle. These measures must be implemented as and where applicable, reasonable and practicable during the pre-construction, construction and post-construction rehabilitation and operational (maintenance) phases of the proposed cable infrastructure upgrade project.

6.1. Code of Conduct

The purpose of the Code of Conduct (CoC) is to minimise the impact of the activities associated with the construction phase on the environment. The rules and regulations prescribed in this CoC are intended to ensure that the impacts on the environment are not prejudiced by the construction activities. Failure to adhere to, or any breach of the conditions within the CoC will result in a fine being levied against the offending or defaulting party / individual.

Labourers appointed during the construction phase must conserve the natural environment, endorsing the principles of sustainable use and minimum impact. They must also be sensitive to the impact of their operations on the environment within which they work and, in doing so, minimise any adverse impacts.

This EMPr forms an integral part of the activities during the construction phase and as such, is legally enforceable. In addition to the restrictions and controls provided for in this EMPr, the environmental controls comprise of the following:

- **Engineers**
  Unless otherwise stated by the *Holder* of the Environmental Authorisation (hereafter referred to as the *Holder*), only a registered engineer must be appointed for the construction phase of the project. The engineer must provide work or services of quality and scope, and to a level, which are commensurate with accepted standards and practices. The engineer must be impartial in decision-making, provision of advice and judgement.
- **Contractors and sub-contractors**
  Unless otherwise determined, only appropriately registered contractors must be appointed. It will be the responsibility of the *Holder* / engineer to ensure that the contractors abide by and comply with the rules and regulations of the Code of Conduct. Contractors shall be responsible for their sub-contractors and employees whilst they are on the development property at all times.
- **Rules and Regulations**
  It is of vital importance that engineers, and contractors understand and acknowledge that they are working on a site that has undergone an environmental assessment, and if authorised will require compliance with all relevant permits/licenses and this EMPr. The role players should agree to conform to all environmental controls specified in this EMPr, and any additional environmental permits/licenses, as well as any additional input by the ECO.

In addition to the EMPr, the environmental controls comprise of the following:

- **Plan Controls**
  A copy of the approved and signed project plans must be available on site during the construction phase of the proposed cable infrastructure upgrade project. Variations of the building plans must be approved by the engineer / *Holder* prior to being implemented.

- **Site Tidiness**
  The contractor must always keep the appearance of the site neat and tidy. Building rubble must be removed from site at regular intervals, and litter must be removed from the site daily (if not, stored in appropriate receptacles). Refuse bins must be available on site which waste can be placed in. The bins must be emptied on a regular basis, as required, and the waste taken to a licenced local waste disposal facility.

- **Safety**
  The contractor must comply with the Health and Safety Act (Act No. 85 of 1993), as amended (OSHA), together with such regulations promulgated thereunder.

  Telephone numbers of emergency services, including the local firefighting service, shall be displayed conspicuously in the Contractor's office near a telephone. No weapons (firearms, airguns, daggers etc.) are permitted on site.

6.2. Site Access and Traffic Management

All construction vehicles need to adhere to traffic laws and regulations. Drivers must be sensitised to the fact that they are working in an area with a potentially high volume of foot and vehicle traffic. The speed of construction vehicles and other heavy vehicles must be strictly controlled to avoid dangerous conditions for other road users within the KNPS. As far as possible, care must be taken to ensure that the local traffic flow pattern is not significantly disrupted, and vehicle operators therefore need to be educated in terms of "best-practice" operation in order to minimise unnecessary traffic congestion or dangers. These practices include, but are not limited to:

- Not unnecessarily obstructing the access point or traffic lanes used to access the site;
- Considering the load carrying capacity of road surfaces; and
- Adhering to all other prescriptive regulations regarding the use of public roads by construction vehicles.

Adequate signage that is both informative and cautionary to passing traffic must be erected to warn other road users (motorists and pedestrians) about the presence of construction vehicles, particularly at the point where construction vehicles enter/ exit the site warning them of the construction. Signage would need to be clearly visible and include, amongst others, the following:

- Identifying the working area as a construction site;
- Cautioning against relevant construction activities;
- Prohibiting access to the construction site;
- Clearly specifying possible detour routes and / or delay periods;
- Possible indications of time frames attached to the construction activities, and;
- Listings of which contractors are working on the site.

Other mitigation measures include:

- The ECO must do awareness training with the contractors and all labourers that will be working on site and must highlight the traffic related risks before construction commences.
- Where possible, construction traffic that may obstruct traffic flow on the surrounding roads must be scheduled outside of peak traffic times.
- Ensure appropriate behaviour of operators of construction vehicles.
- If needed, appropriate traffic management measures and/ or points men (traffic marshals) must be utilised to assist vehicles entering/ exiting the site.

6.3. Site Demarcation

The working areas should be clearly demarcated by appropriate means during the pre-construction or construction phases of the development, as appropriate.

- **Construction Working Area**
  Prior to the commencement of any land-clearing or construction activities, the ECO must be advised of the project programme providing an indication of when clearance and earthworks will commence.

  Prior to the commencement of any land clearance or construction activities, the outer boundary of the working area must be surveyed and demarcated by means of an appropriate method. This demarcation boundary is to ensure that land clearing and construction activities are restricted to only the area strictly required for the proposed activities, and to prevent unnecessary disturbance of soil surfaces and vegetation outside of the approved footprint.

  The demarcation should be retained and maintained for the duration of the construction period or up until the conclusion of the rehabilitation phase. If changes to the extent of the working areas are required, such changes may only be applied once the approval of the appointed ECO, Site Engineer or where applicable, the Competent Authority (the Department of Forestry, Fisheries and Environment; DFFE) has been obtained.

- **No-Go Areas**
  All areas beyond the approved areas of clearance (Areas of Indigenous Vegetation within the Area of Investigation) must be considered "no-go" areas. This approach aims to avoid disturbance activities from expanding beyond the approved Area of Investigation.

  It is recommended that the working areas be demarcated with a suitable material that can be easily identified and noticed. The method of demarcation is to be determined by the ECO and the appointed Contractor. Danger tape flagging (pieces of danger tape tied to twine or rope) may be utilised as a short-term solution. However, the use of only danger tape is not recommended for long-term demarcation as this will easily become untidy and blown away by the wind resulting in pollution.

  For the purpose of this project, all areas beyond the working areas stipulated above are considered no-go areas.

  No-go areas must be considered as off-limits to all construction workers, vehicles and machinery during all phases of the development. No vegetation may be cleared beyond the working areas as stipulated above (unless in accordance with an approved alien invasive management plan and under the supervision of the ECO), and no dumping of any material (waste, topsoil, subsoil etc.) may occur in these areas. Construction workers must be informed of the no-go areas, and if necessary appropriate signage can be used to enforce the demarcation. Any interaction with no-go Areas must be consulted with between the Contractor and ECO prior to any actions.

  No vegetation clearing shall take place without approval of the method statement by the ER. No vegetation clearing shall take place until the site boundaries and "No-Go" areas are clearly demarcated. Before clearing of vegetation, the Contractor shall ensure that all litter and non-organic material is removed from the area to be cleared. Vegetation clearing of the site shall be limited as far as possible. Clearing may not extend beyond the approved Area of Investigation / footprint assessed as part of the Basic Assessment Process. If large areas are to be cleared, consideration should be given to a phased clearing approach to limit potential impacts resulting from large areas standing cleared for extended period of time. Indigenous plant material can be removed from cleared areas and may be stockpiled for mulching.

  Alien vegetation may be used for mulching if it is not in seed. All remaining alien invasive vegetation must be removed and disposed of at an approved landfill site.

In accordance with this proposal, the no-go Area must be considered any area beyond the proposed Area of Investigation / project footprint as assessed in the Basic Assessment Report for the project and indicated in Figure 2 of this EMPr.

- **Demarcation of the Site Camp**
  The area chosen for the site camp and associated facilities must be the minimum area reasonably required to accommodate the site camp facilities, and which will involve the least disturbance to the environment. It is recommended that easily accessible, transformed areas must be used for the site camp. Site selection must be done in consultation with the ECO and the Eskom Environmental Group.

6.4. Site Camp and Associated Facilities

The set up and organisation of the site camp is paramount to ensuring compliance with the requirements of the EA, if approved, and the EMPr. An environmental site file is to be created by the contractor and must be situated within the site camp throughout the construction phase and must be kept by the *Holder* following the conclusion of the construction phase. The environmental file is to include the following as a minimum requirement;

- A copy of the Environmental Authorisation.
- A copy of the General Authorisation in terms of the National Water Act, if required, or any other relative permits (Workplans and licences).
- A copy of the approved EMPr.
- Updated waste slips (waste transporter accreditation certificate, manifest and safe disposal certificate).
- Disposal slips or cleaning slips (ablution cleaning).
- All Environmental Monitoring Reports (EMRs) and ECO instructions.
- Copies of Environmental induction register/s.
- The Protocol for Chance Palaeontological Findings.
- A Complaints Register.
- Updated method statements.
- Any and all emergency procedure/s applicable to site activities.
- An Incident Register.

Method Statements (MS) are written submissions by the Contractor to the Resident Engineer (RE; the Eskom engineer assigned to the project) (with input from the ECO) in response to the requirements of this EMPr or to a request by the RE or ECO. A minimum requirement will consist of the listed MS's below.

The ECO and / or Competent Authority have the authority to request method statements for activities, including but not limited to:

- Establishment of site camp and stockpile area.
- Site clearing
- Cement/ concrete batching, disposal and emergency contingencies.
- Topsoil and sub-soil storage/ stockpiling.
- Storage of fuels and hazardous chemicals and emergency contingencies.
- Waste management system.
- Storm water management and control.
- Dust Mitigation
- Alien invasive plant species management.
- Fire Control & Fire Emergency Plan.
- Emergency preparedness plan / emergency response procedure.
- Post-construction rehabilitation.

Further MS's may be requested by the RE or ECO. The Contractor shall be required to prepare method statements for several specific construction activities and/or environmental management aspects as specified.

It is the Contractors responsibility to ensure that the required method statements are drafted and submitted. The Contractor shall not commence with an activity for which a method statement is required until the RE and the ECO has approved the relevant method statement.

Method statements must be submitted at least seven (7) business days prior to the date on which approval is required (start of the activity).

Should an MS be rejected this will be done so with comment. The seven-day submission period will commence once again on re-submission of the MS.

Failure to submit a MS (either required in terms of the EMPr, or as required before specific works highlighted by the ECO or RE), may result in suspension of the activity concerned until such time as a MS has been submitted and approved. An approved MS shall not absolve the Contractor from any of his obligations or responsibilities in terms of the contract. However, any damage caused to the environment through activities undertaken without an approved MS shall be rehabilitated at the contractor's cost and to the satisfaction the ECO and RE.

The method statements shall cover relevant details with regard to:

- Construction procedures (including vegetation clearance, earthworks, and installation of services) and location of the construction site.
- Start date and duration of the procedure.
- Materials, equipment and labour to be used.
- How materials, equipment and labour would be moved to and from the site as well as on site during construction.
- Storage, removal and subsequent handling of all materials, excess materials and waste materials of the procedure.
- Emergency procedures in case of any reasonably potential accident / incident which could occur during the procedure.
- Mitigation measure that will be employed.
- Compliance / non-compliance with the EMPr Specification and motivation if non-compliant.

The following general management measures pertaining to the set-up, operation and closure of a site camp must be applied where appropriate, reasonable and practicable:

6.5. Fencing & Security

The site camp area must be secured to prevent any unauthorised individuals from entering the site camp and possibly getting injured or posing a safety and/or security risk. Adequate signage must be displayed, designating the site office / camp as a restricted area accessible only to personnel appointed to the construction works of the project. If required, the boundary of site camp should be clearly demarcated and the camp access controlled through the use of a gate or other approved method. A site register is recommended to record any daily visitors and activities, for record keeping purposes.

- **Fire Fighting Equipment**

No less than 2 fire extinguishers must be present at the site camp. The extinguishers must be in a working condition and within their service period. A fire extinguisher must always be present wherever any "hot works", if any, (e.g. welding, grinding etc.) are taking place. It is recommended that all construction workers receive basic training in fire prevention and basic fire-fighting techniques and are informed of the emergency procedure to follow in the event of accidental fires. These may either be in the form of proper training or by means of Toolbox Talks facilitated by the On-site Safety Officer.

Open fires should be prohibited on site. However, it is noted that despite this, incidents may arise where fires are created after hours by security, and labour may attempt to smoke on site. In these cases,

measures should be taken to ensure that activities are managed appropriately. Therefore, should a fire be created on site after hours, the following procedure must be followed:

- Ensure that the security is aware that creating fires within the site boundaries are prohibited.

Should the contractor choose to, he/she may designate a smoking area within the site camp, of which the contractor is solely responsible for the management of this activity on site, and any incidents that may occur. It must contain the following features:

- Appropriate signage.
- A barrel/bucket filled to 50% capacity with sand, for disposal of used cigarettes.
- An appropriately weighted lid, that cannot be easily displaced by volatile weather conditions.
- The bin and designated area must be positioned in such a manner that it is not directly affected by heavy winds.
- This bin must be emptied as is necessary and must not be allowed to reach 75% capacity.

In the case of accidental fires, the contractor must (if required/significant) alert the Koeberg and Local Authority's Fire Department as soon as a fire starts prior to the fire becoming uncontrollable.

- **Waste Storage Area**

Sufficient bins for the temporary storage of construction related waste must be provided inside the site camp and/or at the working area and must be located in such a way that they will present as little visual impact to surrounding residents and road users as possible. Sufficient signage and awareness must be created to ensure that these bins are properly used.

- **Hazardous Substances Storage Area, spills and leaks**

Fuels, chemicals, lubricants and other hazardous substances must be stored in a demarcated, secured, bunded and clearly sign-posted area within the site camp. Sufficient signage and awareness must be created to ensure that these bins are properly used. It must be ensured that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage. Ensure that when substances are transferred, this is done on an impermeable and/or bunded surface, to contain any spillage. Spillage, should it occur, must be disposed of appropriately.

All hazardous materials or substances (e.g. petrochemicals, oils, etc.) must be stored on site only under controlled conditions. All hazardous material and substances shall be stored in a secured, designated area that has restricted entry. All storage must take place using suitable containers to the approval of the RE. Hazard signs and data sheets indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Symbolic safety signs depicting "No Smoking", "No Naked Lights" and "Danger" are to be provided, and are to conform to the requirements of SABS 1186.

Where there may be suitable storage infrastructure (existing yards and fuel tanks etc.), such as those used for current/existing activities at KNPS these may be used provided if this is approved by the RE. All necessary safety requirements in terms of bunds, spill kits and signage must be in place. Fuel storage tanks are permitted to be temporarily established on site for construction purposes provided that the contractor ensures full compliance with the following:

- All local by-laws relating to community and fire safety must be complied with. Most local authorities require that a permit be obtained from the relevant Fire Department. This permit should be kept on file.
- The storage tank capacity may not exceed 9000 litres.
- The storage tank may not be on the premises for a period exceeding that stipulated by the local authority.

- The tanks must be removed on completion of construction or the once the contractor responsible for the tanks has completed their work on site.
- A tank must be erected at least 3.5 metres from boundaries, buildings and other flammable substances or combustible materials.
- A temporary tank must have a bund wall with 110% capacity of the tank's total storage capacity.
- The fuel tank shall be steel and maintained by the fuel suppliers and/or Contractor.
- The floor and wall of the bund area shall be impervious to prevent infiltration of any spilled / leaked fuel into the soil.
- The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled fuel to be removed.
- The sump must have a lock off valve that can only be opened in an emergency.

Should a mini-mobile type trailer tank or bowser be used on site, the following specifications apply:

- The tank will be maintained by the fuel suppliers and/or Contractor and is to be kept clean and leak free.
- The trailer is to be kept on site with a drip tray at all times and is to be removed from site at the end of every day unless it is kept in a bund area of 110% of the tank volume.

A hydrocarbon bioremediation product approved by the RE with input from the ECO must be stored on site and near the fuel stores for any emergencies. Once a purpose manufactured hydrocarbon spill remediation product has been used or has been used to treat contaminated materials (soil, rubble etc.) it must be disposed of, with the treated material, at a facility licensed to receive such waste.

Areas for storage of fuels and other flammable materials shall comply with standard fire safety regulations and may require the approval of a fire prevention officer. The contractor must ensure that there is adequate firefighting equipment at the fuel stores and that persons are adequately trained to use this equipment.

All empty drums and externally dirty drums shall be sealed and stored in the bunded area. If fuel is dispensed from 200 litre drums, the proper dispensing equipment shall be used, and the drum shall not be tipped in order to dispense fuel. The dispensing mechanism of the fuel storage tank shall be stored in a waterproof container or within the bund area when not in use.

The location of suitable areas for maintenance and refuelling must be identified by the ER in collaboration with the ECO. The ECO must be involved in the decision and must provide guidance from an environmental perspective prior to commencement of the proposed action.

Any significant accidental release of a hazardous substance during the construction and post-construction phase of the project must be reported to the relevant authorities, including the Western Cape Department of Environmental Affairs and Development Planning's Directorate: Pollution and Chemicals Management, in terms of Section 30(3) of the NEMA.

The contractor shall ensure that all employees are aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the, RE and ECO. The Contractor shall ensure that the necessary spill response hydrocarbon remediation materials (e.g. chemcap, spill-sorb, drizzat pads, enretech, OilCap or peat moss) and equipment for dealing with spills and leaks are available on site at all times. The source of the spillage shall be isolated. The Contractor shall contain the spillage using sand berms, sandbags, pre-made booms, sawdust or absorbent materials. Treatment and remediation of the spill areas shall be undertaken to the reasonable satisfaction of the RE.

The Contractor shall submit his emergency procedure prior to bringing on site any such substances. All spills or accidents involving such materials are to be recorded by the Contractor. The Contractor is responsible for ensuring that these records are submitted to the ECO. The cleanup of spills and any damage caused by the spill shall be for the Contractor's account.

- **Potable Water**

An adequate supply of potable water must be provided to construction workers at the site camp. It is the Contractor's duty to ensure that the labour has adequate access to potable water throughout construction phase, and to monitor weather conditions, to ensure that labour has enough drinking water on hotter days. Should enough potable water not be available on warmer days, construction activities must cease, until conditions are safe to continue. To conserve water, it is recommended that buckets of water kept within the site camp and are reserved for the use of cleaning tools and machinery.

The Contractor shall make safe drinking water fit for human consumption available at the site offices and all other working areas. All drinking water must be from a legal source and comply with recognised standards for potable use. No water may be abstracted from streams, rivers, wetlands or boreholes unless the necessary water use authorisations are in place. If water is stored on site, drinking water and multi-purposed water storage facilities shall be clearly distinguished and demarcated. No water is to be wasted on site. Any leaks must be reported and repaired immediately. All pipes, taps and associated infrastructure, where made available to the Contracting team for use, are too maintained in good working order.

- **Ablution Facilities**

Chemical toilets must be kept at the site camp, on a level surface and secured from blowing over, and must be located in such a way so as to ensure that the toilets will not cause any form of pollution. The supply toilet facilities must comply with the requirements of the SABS and the OSHA.

The ablution facilities must not be linked to a river system/drainage lines/the ocean in any way. Toilets must be serviced regularly and kept in an orderly state. The contractor must ensure that no spillage occurs when the toilets are cleaned, serviced or moved. The toilet facilities must be emptied on a weekly basis by an appropriately registered service provider. Proof of this weekly servicing must be obtained and filed in the Environmental File on site. The contractor shall ensure that chemical toilets are emptied before the builders' holidays and that no spillage occurs when they are emptied. All contents must be removed from the site. Under no circumstances may waste be discharged into the environment or be buried on site.

Performing ablutions outside of the provided toilet facilities is strictly prohibited and the ECO would need to regularly inspect the state of the chemical toilets to ensure compliance.

The Contractor is responsible for the erection and maintenance of adequate ablution facilities and washing areas and for enforcing the use of these facilities. Under no circumstances may the natural environment be used as a toilet or cleaning area. The Contractor shall be responsible for ensuring that all ablution facilities are maintained in a clean and sanitary condition to the satisfaction of the ER. All temporary portable toilets shall be secured in such a manner so as to prevent them toppling due to wind or any other cause. Plumbed toilets must have no leaks or malfunctioning valves. No chemicals, oils or similar construction related materials are to be disposed of via the toilets on site. Ablution facilities (chemical toilets, etc.) must be provided at all construction camp areas where there will be a concentration of labour. Toilet paper must be provided.

- **Eating & Rest Area**

A dedicated area within which construction workers can rest and eat during breaks must be provided within the site camp. Alternatively, a designated area must be identified within the Area of Investigation / project footprint to make allowance for these activities. This area must be agreed upon by the RE, ECO and the *Holder*. Seating, shaded areas and waste bins must be provided. If none is available, the Contractor shall provide adequate temporary shade within the construction areas to ensure that site personnel do not move off site to eat. The Contractor shall provide adequate refuse bins with lids at all eating areas to the satisfaction of the RE. The bins must be weatherproof and scavenger proof and approved by the ER. If deemed necessary by the RE, the Contractor shall demarcate designated eating areas.
No feeding of wild animals shall be permitted. Food and food products are to be stored in such away so as not to attract scavenging animals.

- **House-Keeping**

The site camp and associated site camp facilities must be kept neat and orderly at all times, in order to prevent potential safety risks and to reduce the visual impact of the site during construction.

6.6. Protection of Fauna

Construction workers are to be sensitised to the fact that they may encounter fauna during the construction period. This must be included in the environmental awareness training completed with all site personnel before any construction commences. Environmental Awareness Training must educate labour on conduct in terms of faunal management throughout construction phase, including but not limited to:

- No person/s may harm, kill, capture or keep any fauna.
- Appropriate access control must be put in place to reduce the risk of animal species gaining access to the development area.
- Where possible, avoid interactions, particularly with fauna that can inflict harm, if such fauna is identified on site contact local SPCA other animal protection and removal services.
- No domestic animals are permitted on the sites.
- Maintain good housekeeping, so that fauna cannot hide amongst waste and material.

If any fauna is encountered by construction workers, the SEO or ECO is to be notified. If the SEO or ECO is not on site, the site manager is to be informed. Rescued fauna must be released into a nearby area of similar habitat away from any construction. Contact details for animal rescue services and/or snake wrangler, from the local area, should be available on site, in case of an emergency.

6.7. Indigenous Vegetation Clearing and Protection.

The following measures must be implemented:

- It is important that clearing activities are kept to the minimum and take place in a phased manner. This allows animal species to move into safe areas and prevents alien invasive encroachment, and wind and water soil erosion of the cleared areas. Blanket clearing of vegetation must be limited to the approved development footprint.
- Any alien vegetation that is cleared must be disposed of in accordance with the Alien Invasive Management Programme and in consultation with the ECO. Chipping of alien invasives must occur immediately and must not be stored on site for more than 90-days.
- Workers are NOT allowed to collect any flora species. All flora remains the property of the landowner and must not be disturbed, upset or used without their expressed consent.
- A vegetation monitoring programme shall be in place, not only to ensure compliance with this EMPr throughout the construction phase, but also to monitor any post-construction environmental issues and impacts such as increased surface runoff.

Where indigenous vegetation must be cleared for the development, the following measures must be implemented:

- An Independent Environmental Control Officer must oversee compliance with all the prescribed environmental requirements and mitigation measures listed here and will be on site regularly.
- Only the areas required to fulfil the needs of the construction activities and access to the construction site must be cleared of vegetation.
- Vegetation outside of the approved footprint must not be cleared, unless permitted in accordance with the alien invasive management plan, and under the supervision of the ECO.
- Land clearing and earthmoving activities should not be undertaken during strong winds or heavy rainfall events, where possible.
- Trees and shrubs that are directly affected by the operations may be felled or cleared but only by the expressed written permission of the ECO, and under the applicable permit obtained in terms of the Nature Conservation Ordinance (19 of 1974, amended 2000), if applicable.
- Stripped vegetation should be temporarily stored during operations and to be used later to stabilise slopes/soils. This excludes alien invasive species.
- Ensure any open spaces/bare areas are kept clear of alien plant species through the adoption of an Alien Invasive Management plan.
- No unpermitted/uncontrolled fires are permitted on site.
- Rehabilitation of vegetation of the site must be done as described in the approved Rehabilitation Plans.
- To limit adverse impacts to the surrounding environment, the contractor and labourers must take great care if cement is to be mixed on site. Cement is to be mixed on thick plastic sheets or in large buckets that are bunded. Any spillage must be cleaned up immediately. Cement water must also to be contained in the above manner and allowed to dry out and then removed from site. Cement water, which is highly alkaline, poses a definite threat to the soil and seed banks, should the water disperse into surrounding areas.

6.8. Alien Invasive Species Control

Several exotic invasive and other weed species were noted on the site. Existing infestations and any further spread of these species pose a negative risk to the environment by causing direct habitat destruction, increasing the risk and intensity of wildfires, and reducing surface and sub-surface water. Alien Invasive Plants require removal according to the Conservation of Agricultural Resources Act 43 of 1983 (CARA) and the National Environmental Management: Biodiversity Act (10 of 2004; NEMBA): Alien and Invasive Species Lists (GN R598 and GN R599 of 2014).

Removal of species must take place throughout the construction and post-construction phases.

6.9. Topsoil and Subsoil Management

Topsoil must be removed from any area where physical disturbance of the surface will occur, including within the footprint of the development site (working area) and possibly within the site camp, ablution area, refuelling area and temporary waste storage area. Topsoil removal and stockpiling must be undertaken only after the ECO has been consulted with. The following soil management measures must be implemented:

- Topsoil & subsoil that has been excavated must be stockpiled separately, along & adjacent to the excavation areas and must be covered.

- Topsoil stockpiles must not be covered with tarpaulin, as this may smother and decrease the virility of topsoil.
- Excavated topsoil and subsoil must be stockpiled for the duration of the active construction period and utilised for the final landscaping and rehabilitation of disturbed areas on site.
- The topsoil & subsoil storage area must be located on a level area outside of any surface drainage channels outside the riparian zone, and at a location where it can be protected from disturbance and river flow/floods during construction and where it will not interfere with construction activities.
- Topsoil and subsoil stockpiles must be adequately protected from being blown away or eroded by storm water. If necessary, shade cloth or other suitable measures must be used to stabilise and protect the stockpile from wind/water erosion.
- Handling of topsoil must be minimised as much as possible, and the location of the topsoil berm must be chosen carefully to avoid needing to relocate the topsoil berm.
- Ideally, topsoil is to be handled twice only, once to strip and stockpile, and once to replace, level, shape and scarify.
- Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of roads.
- Topsoil stockpiles must not exceed 1.5 m in height and must not be compacted.
- If soil stockpiles will be stored for an extended period of time, the stockpiles must be kept clear of weeds and alien vegetation growth by regular weeding, (or application of herbicides if agreed with the ECO).
- Soil material that will not be re-utilised on site may be removed from site and taken to an appropriate site for re-use or disposal.
- Note that the topsoil must be the final layer applied to a rehabilitated/ re-landscaped site, after subsoil/ spoil material has been placed and shaped on the site.
- Material Stockpiles (including imported materials and rubble) may not exceed 2 m in height.

6.10. Integrated Waste Management Approach

It is recommended that an integrated waste management system is adopted on site. The system must be based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Separate waste bins/skips that are weather- and animal proof must be provided for recyclable waste, general waste and hazardous waste. Recovered builder's rubble & green waste may be stockpiled on the ground within the site camp, or in separate skips until removal. These bins/skips must be emptied, and the waste taken to a registered recycling facility. The receipts from the facility must be kept on file and must be available on request.

The non-recyclable and non-reusable waste (e.g. builder's rubble, etc.) generated on site must be disposed of at a landfill site licensed in terms of the applicable legislation. The waste manifest and safe disposal certificate from the facility must be kept on file and must be available on request.

Chemical toilets present a risk to the surrounding environment and must be managed accordingly. Chemical toilets must be kept within the site camp (not be linked to the storm water drainage system), on a level surface and secured from blowing over. Chemical toilets must be regularly emptied by a registered cleaning company and the waste disposed of at an appropriate wastewater disposal/ treatment site. Care must be taken to prevent spillages when moving or servicing chemical toilets.

Hazardous substances such as diesel, oil and detergents will be present on site throughout the construction phase of the project. Hazardous substances pose a greater risk to the surrounding environment than general substances and therefore need to be managed accordingly. A designated

storage area within the site camp that is clearly demarcated must be set aside for the storage of hazardous substances and is to be treated as a no-go zone to unauthorised personnel. Appropriate signage, Material Safety Data Sheets (MSDSs), recently serviced fire extinguishers and spill kits should accompany the hazardous substances. Appropriate storage of hazardous substances is important while drip trays should always be utilised when decanting of hazardous substances and when refilling chemical/ fuel storage tanks. If any spills do occur, the solid must be excavated and disposed of as hazardous waste.

Cement and concrete batching will be permitted on site, but may only take place on designated impermeable, bunded surfaces, as agreed with the ECO. Used cement bags should be disposed of as hazardous waste on site.

6.11. Erosion Control and Stormwater Management

Stormwater must be managed in accordance with the Municipal Stormwater Management By-law and based on Sustainable Drainage Systems (SUDS). The SUDS systems attempt to maintain or mimic the natural flow systems as well as prevent the wash-off of urban pollutants to receiving waters. Further to this, the EA *Holder* or appointed contractor must ensure that:

Where necessary, Stormwater Management Plans must be developed by the Contractor (as part of the Method Statements) for the site and should include the following:

- The management of stormwater and erosion control during construction.
- The management of stormwater and erosion control as part of post-construction.
- Temporary drainage works are implemented, where/when required, to prevent sediment-laden surface water from draining into river systems in proximity to the site. Stormwater must be prevented from entering or running off site.
- Sheet runoff from access roads and the walkways is slowed down by the strategic placement of berms.
- Diversion channels should be constructed ahead of the open cuts, and above emplacement areas and stockpiles to intercept clean runoff and divert it around disturbed areas into the natural drainage system downstream of the site.

As much indigenous vegetation must be maintained and encouraged to minimise erosion;

- All soil compacted because of construction activities as well as ongoing operational activities falling outside of project footprint areas should be ripped and profiled;
- To ensure that site is not subjected to excessive erosion and capable of drainage runoff with minimum risk of scour, their slopes should be profiled at a maximum 1:3 gradient where possible;
- Rehabilitation is necessary to control erosion and sedimentation of all eroded areas (where works took place);
- It is importation that the rehabilitation of site is planned and completed in such a way that the runoff water will not cause erosion; and
- A monitoring plan for the development and the Area of Investigation must be implemented to prevent erosion and incision.

The scale and nature of the erosion and stormwater control measures implemented on site must be appropriate to the conditions on site, and sufficient to achieve the desired outcomes (soil preservation, prevention of flooding, stormwater control) to the satisfaction of the ECO and RE.

The prevention of soil erosion can be initiated by designating specific areas for stockpiling of raw materials with consultation of the ECO. No stockpiling is to occur on or near slopes or water resources and all stockpiling areas must be approved by the ECO before stockpiling occurs.

Stockpiles need to be effectively managed and maintained as they have the potential to contribute to runoff and erosion. To prevent this, the following management measures must be implemented:

- Stockpiles of earth material may not be located within any storm-water drainage pathways and must be outside of the reach of potential flood waters.
- Any erosion runnels/ gulleys/ channels that form on site must be infilled with appropriate material, compacted, rehabilitated as needed and appropriate erosion control measures put in place to prevent recurrent erosion at that site. Rehabilitation of erosion channels must be ongoing during the construction phase and not left until the end of the construction period.
- It may be necessary to implement small-scale erosion protection measures at the construction site, to prevent soil erosion. Such measures may include the use of shade netting, geo-fabric, brush-packing or similar barriers in areas susceptible to erosion and along exposed slopes. The Storm Water Management Plan must adhere to the principles of sound storm water management as well as the Municipal Stormwater Management By-law and based on Sustainable Drainage Systems (SUDS). The storm water management system must be implemented on site and must be properly maintained to ensure that contaminated run-off from the construction site is prevented from flowing into the watercourse/ocean.

Cleared areas and any other area susceptible to erosion should be provided with a suitable cover and stabilised as soon as possible via the implementation of appropriate erosion control measures. This may include use of cut-off drains, temporary drainage channels, brush-packing, mulching, planting or sodding, use of environmentally benign soil binders, use of geo-textile or other coverings. The appropriate measures should be selected by the contractor in consultation with the RE & ECO.

The Contractor shall take reasonable measures to control the erosive effects of stormwater runoff. The Contractor shall use silt screens to prevent overland flow from causing erosion. Point source discharge of storm water must be prevented on slopes as this will lead to erosion of the unstable slope with loss of vegetation and resultant deep donga erosion. Any stormwater outlets must be constructed in such a manner as to ensure no soil or bank erosion takes place.

The use of straw bales as filters, which are placed across the flow of overland stormwater flows, can be used as an erosion protection measure. The ploughing-in of straw offers limited protection against storm water runoff-induced erosion and can be used as an erosion protection measure. The Contractor shall be liable for any damage to downstream property caused by the diversion of overland storm water flows. Drip trays shall be used for all pumps, generators, etc. in order to prevent water contamination as a result of fuel spills or leaks.

6.12. Excavations and Earthworks

Any major earthworks with bulldozers and heavy machinery must be under constant supervision. Operators must be aware of all the environmental obligations, as there is always the potential to inflict damage to the sensitive areas. Any unnecessary or excessive heavy machinery movement must be kept to a minimum i.e. only what is absolutely necessary. Areas to be excavated must be clearly demarcated. Areas which have already been excavated and entail fairly significant earthworks, must be similarly demarcated to avoid the spreading of construction activities beyond the approved working areas.

All excavated material must be stored on a flat surface away from any drainage line, sloped areas or area susceptible to erosion. The location must be decided in consultation with the ECO. Stored material must be protected from wind and water erosion, and this may entail covering the material with suitable shade cloth material or similar (if and when necessary). The shade cloth may need to be weighed down in such a manner that any stream flow is directed away from the stockpile, reducing the risk of erosion.

Whenever any excavation is undertaken, the following procedures shall be adhered to:

- Topsoil must be handled as described in this EMPr.
- Excavations must take place only within the approved demarcated site.
- Excavations must follow the contour lines, where possible and/or applicable.
- Where possible, excavations should be closed overnight, over weekends, holiday periods, and during any other planned site closure periods, where feasible.
- Excavations must be temporarily demarcated shade cloth or barrier fencing to obstruct visual impacts and to prevent the harm to animals or unauthorised persons that may fall into excavations.
- The construction site will not be left in any way to deteriorate into an unacceptable state.
- Once excavations have been filled with overburden and coarse natural materials and profiled with acceptable contours (including erosion control measures), the previously stored subsoil and topsoil shall be returned to its original depth over the area.
- Rehabilitation of the site shall take place according to the Vegetation Rehabilitation Programme and must occur concurrently with the construction phase.

6.13. Visual Impact

The proposed project has the potential to cause a visual impact during the construction and post-construction periods. To minimise the potential visual impact, all working areas, storage facilities, stockpiles, waste bins, elevated tanks and the site camp should be located in such a way that they will present as little visual impact to surrounding residents and road users as possible. Waste must be managed according to this EMPr. Good housekeeping practices on site must be maintained to ensure the site is kept neat and tidy. The site camp may require visual screening via shade cloth or other suitable material. The use of reflective materials and excessive lighting should be avoided, and construction vehicles must enter and leave the site during working hours (07:00-17:00).

6.14. Noise Management.

Additional noise is expected during the construction period due to construction activities. It is important that and earth-moving activities be restricted to normal construction working hours (7:00 – 17:00) as far as possible. Work on site must be well-planned and should proceed efficiently so as to limit the duration of the disturbance. This is to be done by ensuring that all equipment is in good working condition and fitted with mufflers/exhaust silencers in necessary. Noise levels must comply with the relevant health & safety regulations and SANS codes and should be monitored by the Health & Safety Officer as necessary and appropriate, and all affected parties must be informed of the excessive noise factors.

The Contractor shall endeavour to keep noise generating activities to a minimum. The Contractor shall attempt to, as far as possible, warn any local communities and residents that could be disturbed by noise generating activities, such as blasting or piling, well in advance and shall keep such activities to a minimum. The Contractor shall be responsible for compliance with the relevant legislation with respect to noise. Construction processes and machinery/vehicles with the lowest noise emission values available must be utilised. A well planned and co-ordinated "fast track" procedure must be

implemented to complete the total construction process in the shortest possible time. Noise levels must comply with the SANS 100103 – 0994 (recommended noise levels).

All plant, equipment and vehicles are to have effective silencers/mufflers fitted that would otherwise cause a noise level exceeding 85dBI. Exhaust systems are to be in good repair with no holes in the piping. Regular check-ups and adequately maintained must be undertaken to keep all equipment and vehicles in good working order to reduce noise. Excessively noisy equipment, vehicles or machinery requiring repairs are to be removed from site. No sound amplification equipment (hooters, loud music speakers, sirens etc.) is to be used on site except in emergencies.

6.15. Dust Management

Although the generation of dust is synonymous with construction sites, care needs to be taken to prevent excessive dust from impacting the surrounding environment and community. Majority of the dust causing activities will take place during the construction period. Exposed surfaces, such as stockpiles and cleared areas should be provided with a suitable cover as soon as possible or wetted down. Construction vehicles should maintain low speeds of 20-40km/h and must ensure that tarpaulins are used to cover any loads transported. Dust levels specified in the National Dust Control Regulations (GN 827 of November 2013) may not be exceeded. i.e. dust fall rates in non-residential areas may not exceed 1200 600mg/m^2/day, measured using reference method ASTM D1739.

A Complaints Register must be available at the site office for inspection by the ECO, in case of complaints, such as those related to dust. This should form a part of your Environmental Site File. The register shall contain all contact details of the person who made the complaint and information regarding the complaint itself as well as any follow-up undertaken, if required.

The Contractor shall submit a MS to the RE detailing how potential dust. The contractor will consider the recommendations above while bearing in mind that these are not the only available solutions.

6.16. Heritage Resources

Thie following mitigation measures have been presented toward managing the potential impacts on the Heritage Resources in the area:

- Fossils and Stone Age artefacts are protected by law. Should anything of a palaeontological/palynological nature be found on site by the Contractor (or any other party), e.g. bones not previously visible, work is to be stopped in that area immediately, and the Environmental Control Officer (ECO) notified. Failure to do so will result in a penalty and this must be carefully explained to workers during the Environmental Education Programme undertaken by the ECO. No palaeontological or archaeological material may be removed from the site without a permit from Heritage Western Cape.
- Should palaeontological and/or archaeological material be encountered, the ECO will advise on demarcation of this area and notify the specialist (palaeontologist/archaeologist with appropriate experience) to view material and ascertain whether further study of the area will be required.
- Should a specialist confirm a genuine fossil or sub-fossil and recommend further study of the area, work in the applicable area is to cease until further notice. Heritage Western Cape is to be informed immediately by the ECO.
- Should any human remains be disturbed, exposed or uncovered during excavation, work in that area must stop and the find shall immediately be reported the South African Police Service

and the monitoring specialist. If suspected that the remains are older than 60 years, the SAHRA (021 462 4502) must be informed and established protocols followed.

- The removal of discovered palaeontological remains, by a contracted specialist shall be at the applicant's cost and will include the cost of any dating.
- All palaeontological and archaeological material must be lodged in an appropriate Iziko Museums of South Africa collection.
- If fossils are discovered immediately stop construction and consult with the appropriate heritage body or ECO. The contact details, as well as the detailed steps to be followed are found on Appendix E of this EMPr.

6.17. Site Closure and Rehabilitation

Upon completion of the construction phase, and after each maintenance event, all disturbed areas, including the working area, temporary access road, and all areas utilised for the site camp and associated site camp facilities, if applicable, will require rehabilitation as follows:

- On completion of the construction operations, the site camp area must be cleared of all site camp facilities, ablution facilities, fencing, signage, waste and surplus material.
- All areas within the working area and site camp that have become devoid of vegetation or where soils have been compacted due to construction activities must be scarified or ripped to improve filtration and reduce run-off.
- All demarcation fencing, including all droppers, wires, netting and barrier tape must be removed from site and taken to an appropriate site for re-use or disposal.
- Surfaces must be checked for waste products from activities such as concreting or asphalting and cleared in a manner approved by the ECO. Any soil contaminated with hydrocarbons (oil, fuel, etc) or other hazardous substance must be collected and disposed of as hazardous waste at a licenced disposal facility.
- All construction waste is to be removed from the site and disposed of at an appropriate facility. Burying or burning of waste or rubble on site is strictly prohibited.
- Topsoil removed and stockpiled before construction, must be replaced by spreading it evenly over the areas from which it was removed. This topsoil (and the seedbank it contains) will facilitate the re-vegetation of the site.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Site Manager may require that the soil be analysed and any deleterious effects on the soil arising from the activity, be corrected and the area be seeded with a vegetation seed mix to his or her satisfaction. This *must* be done in consultation with the ECO.
- Disturbed areas, especially areas where excavations have taken place, must be shaped as appropriate (original topography must be restored where possible), and covered with a layer of stockpiled topsoil as soon as possible.
- Any topsoil, subsoil or other excavated material that cannot be utilised during site rehabilitation must be removed from the site and disposed of at an appropriate disposal site.
- The disturbed, newly rehabilitated surfaces (particularly steeper slopes and areas recently covered with topsoil) must be protected from wind & water erosion using mulch, brush packing or other appropriate erosion protection measures. Brush-packing/mulching is done by covering the exposed surface with organic plant material such as branches, plant cuttings and leafy material. Ideally the vegetation removed from site at the start of the construction must be utilised. Brush-packing/mulching plays a valuable role in erosion control, while also promoting re-vegetation of the site by retaining moisture in the soil, introducing seeds and/or trapping wind-blown seeds and providing organic material (compost) to promote new plant growth.

- Final landscaping and rehabilitation of the site must be done to the satisfaction of the ECO and must adhere to all conditions/requirements of the Environmental Authorisation.

7. ENVIRONMENTAL IMPACT MANAGEMENT: PLANNING AND DESIGN PHASE

No direct environmental impacts are associated with the planning and design phase. However, poor planning or inappropriate design decisions in this phase may result in environmental impacts arising during subsequent phases of the project.

Planning and design activities must therefore take into account the environmental constraints and opportunities identified during the Environmental Impact Assessment process, in order to avoid or minimise the potential future impacts of the development. Proper planning is also essential to ensure that adequate provision is made to implement the environmental requirements of this EMPr, and to ensure that the development is compliant with additional conditions which may be included in the Environmental Authorisation.

The environmental management objectives (goals) during this phase are to:

- Appoint an Independent Environmental Control Officer.
- Compile and adopt a suitable and acceptable Stormwater Management Plan.
- Update the EMPr (if necessary).

These environmental management objectives, as well as the management actions that must be implemented in order to achieve the desired objective and avoid/minimise potential impacts are discussed in more detail below.

7.1. Objective 1: Appointment of an Environmental Control Officer and Environmental Auditor

***Impact Management Objective:* To appoint a suitably qualified and experienced environmental control officer, environmental auditor.**			
Potential impact to avoid	Failure to appoint an ECO, and should it be required in terms of the Environmental Authorisation, an Environmental Auditor, and Environmental Auditor will result in non-compliance with the requirements of the EMPr.		
Impact Management Outcome	The requirements of the EMPr are implemented and monitored during all phases of the project, which will promote sound environmental management on site.		
IMPACT MANAGEMENT ACTIONS			
Mitigation measure		Responsible party	Time period
Environmental Auditor & Control Officer: • Should it be required in terms of the Environmental Authorisation (EA), a suitable qualified and experienced Environmental Auditor must be appointed before any activities commence on site. • A suitably qualified and experienced Environmental Control Officer (ECO) must be appointed before any activities commence on site. • The appointed ECO must adhere to the requirements stated in Section 11 of this EMPr. • The appointed ECO must be advised of the construction start date, at least two weeks in advance, prior to the commencement of any construction activities on site, so that the ECO can perform a pre-commencement inspection, ensure any pre-construction conditions of the environmental authorisation are completed, and plan for environmental awareness training of construction workers (see Section 14 for Environmental Awareness Plan and Appendix I for Environmental Awareness Training Booklet).		Eskom Holdings SOC Limited	During design phase
Performance Indicator	• A qualified ECO (should it be required in terms of the EA) is appointed prior to the commencement of any construction activities (including pre-construction set-up activities) on site.		

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7.2. Objective 2: Legislative compliance

Impact Management Objective: ***Legislative compliance***		
Potential impact to avoid	Commencement of activities without all relevant permits/permissions/licences/approvals including registered servitudes, permits to remove specific vegetation, etc. as well as commencing without implementation of specialist recommendations, and compliance with EMPr pre-construction activities, can result in penalties, time delays and excessive costs. All stemming from poor planning.	
Impact Management Outcome	All permits, permissions, licences, approvals, and specialist input are acquired, and the project is compliant with the respective conditions.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period

General
• Ensure all relevant permits/licenses/approvals are in place and are valid prior to commencing with works. These include:
  o Environmental Authorisation;
  o Permits to be Obtained from Cape Nature for the clearance of Indigenous vegetation, if applicable.
• Ensure that the Contractor has accepted the approved EMPr and Environmental Authorisation (and any other relevant permits/licenses, etc), as a part of their Tender Document, to ensure that they are fully aware of their responsibilities in terms of the implementation of these documents.
• Ensure that the Contractor has provided method statements for activities intended to be undertaken, and these are checked and approved by the ECO as well as the Engineer.
• Inform ECO of planned works ahead, so as to ensure inductions are undertaken timeously.
• Involve ECO in selection of site camp location.
• Ensure that a site layout plan is received, this plan must indicate the total clearance areas, site camp.
 	
Programme of Works:
• Ensure that the construction programme is pre-planned
 	
Unplanned/Planned Shutdown:
Should site need to be closed, ensure the following is undertaken:
• All waste is removed from site.
• All stockpiled soils, etc. is removed from site or is bunded efficiently and covered with tarp, to minimise dispersion.
• Ensure all excavations are backfilled, and recommended rehabilitation is commenced at the very least.
• Ensure heavy machinery is stored safely.
• Contact the ECO to undertake an inspection and advise on any appropriate measures that need to be undertaken.
	Eskom Holdings SOC Limited	During design phase

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• It is important to note that the Environmental Authorisation and approved EMPr is a legal and binding document, therefore regardless of reason for shutdown compliance with these conditions must be met, or the Competent Authority must be informed of the reason and estimated duration of shutdown.		
Performance Indicator	The project does not incur delays, excessive costs and penalties due to unobtained permits and non-compliance with required permits, permissions, licences, and approvals.	

8. ENVIRONMENTAL IMPACT MANAGEMENT: PRE-CONSTRUCTION PHASE

Proper set-up during the pre-construction phase can set the foundation for good environmental management during the active construction phase to follow and can avoid potential impacts from arising at a later date.

The Impact Management Objectives for this phase of the project relate to:

- Identification and Demarcation of no-go areas and working areas.
- Establishment of site camp and associated site facilities.
- Pre-construction ECO visit.

8.1. Objective 1: Identify & demarcate no-go and working areas

Impact Management Objective: ***Demarcation of no-go and working areas.***		
Potential impact to avoid	• Insensitive location of working areas and site facilities may result in environmental impacts during the construction phase. • Failure to accurately demarcate working areas may result in works exceeding the approved assessed footprint, resulting in non-compliance and potential penalties and delays.	
Impact Management Outcome	• Future construction activities will be restricted to within the designated areas & all areas indicated as no-go areas, will be protected from disturbance. • Excavating into potentially fossil-bearing deposits during the pre-construction phase might damage some fossils	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
General: • Inform ECO of planned works ahead, so as to ensure inductions are undertaken timeously. • Involve ECO and Eskom Environmental Group in selection of site camp location. • Ensure all labour and sub-contractors undergo environmental inductions. • Ensure permits/licenses applicable, are obtained prior to commencement of construction works on site. • Following the set rules regarding finding fossils found in Appendix E of this EMPr. • Environmental Awareness and Training – Ensure all labour are informed and plant operators are aware of risks, issues, dos and don'ts within the project areas.	Environmental Control Officer (ECO) and Contractor	Pre-construction phase (prior to arrival of construction equipment, machinery, or workers on site)

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Permits and other approvals • Where deemed necessary, relevant Heritage permit(s) (HWC) should be applied for well ahead of construction. The applicability of the workplan approval will depend on the feedback received from HWC regarding the Notice of Intent to Develop (NID). **Working Corridor** • Ensure the relevant ECO is present and consulted for demarcation of the Area of Investigation / working areas at any one time. • Demarcate the working corridor with temporary fencing (e.g. poles and shade cloth) to obstruct visual impacts; • The temporary demarcations must be retained and maintained on a daily basis for the duration of the construction period in any one area. • Contain disturbance to the demarcated construction area at any one time. • Areas outside the Area of Investigation / Project Footprint described in the EMPr must be considered no-go areas. **Road users;** • Ensure clear signage is erected on the main access road informing users of the R27 of the presence on turning construction vehicles.		
Performance Indicator	No-go areas, working areas and areas for site camp facilities have been identified and appropriately demarcated to the satisfaction of the ECO, before construction activities commences on site. No fossils have been disturbed.	

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8.2. Objective 2: Establish Environmentally Sensitive Site Camp & Site Facilities

<table>
<tr><td colspan="3"><u>Impact Management Objective:</u> To set up and equip the site camp and associated site facilities in a manner that will promote good environmental management.</td></tr>
<tr><td>Potential impact to avoid</td><td colspan="2">• Failure to properly demarcate and set up site facilities may result in disorganised construction activities and unnecessary disturbance to the site.
• Failure to provide the necessary site facilities and/or failure to equip these facilities with the necessary equipment/materials may impede good environmental management & compromise ability to respond to emergencies.</td></tr>
<tr><td>Impact Management Outcome</td><td colspan="2">Site camp facilities do not impact significantly on environment. The equipment required to implement the provisions of the EMPr are provided on site.</td></tr>
<tr><td colspan="3">IMPACT MANAGEMENT ACTIONS</td></tr>
<tr><td>Mitigation measure</td><td>Responsible party</td><td>Time period</td></tr>
<tr><td><u>General:</u>
• The site camp and associated site facilities must be set-up and managed in accordance with the general environmental management measures specified in Section 6.4 of this EMPr.
• The site camp must be strategically set up in a manner that will promote good environmental management during construction/ demolition, and to respond to potential emergencies (including fires, spillage of hazardous substances etc.) that may arise.
• The site camp, storage facilities, stockpiles, waste bins, and any other temporary structures on site must be located in such a way that they will present as little visual impact to surrounding residents and road users as possible.
• Frequent stormwater outlets must be maintained (if necessary), to prevent erosion at discharge points.
• A sweep of the proposed cable infrastructure upgrade project footprint must be done prior to the site establishment in order to ensure that no animals are hurt during site clearance activities.
• A sweep of faunal species must be done by the Contractor, prior to the clearance of vegetation in any one area. Collected fauna to be relocated into the adjacent Nature Reserve should also be included in the Pre-Construction mitigation measures
• In the event of a temporary site closure occurring such as the builder's holidays, temporary suspension of works or any period of inactivity longer than 7 working days the Contractor is to notify the ECO. The Contractor shall check the site according to the requirements of the ECO, and ensure that all items are addressed. The Contractor will provide a brief written report on compliance to the ER and ECO prior to the temporary shutdown date
<u>Site Camp Establishment:</u>
• The construction area including the construction camp is to be cordoned off (by through reasonable measures).
• If in an area that contains vegetation, utilise disturbed areas only, and:
• Ensure site selected is inspected and approved by ECO as well as Eskom Environmental Group.
• Utilise disturbed or transformed areas for site camp establishment.
• Site camp facilities must be the minimum area reasonably required to accommodate the site camp facilities and must not be allowed to impact areas not within the designated footprint.
• Ensure the site camp is positioned on a levelled area and is easily accessible.
• The boundary of site camp should be clearly demarcated and the camp access controlled through the use of a gate or other approved method.
• Ensure access to site is at one point, unless two existing points of entry/exit are identified.
• Ensure access onto site is controlled.
• Ensure there is 24hr security.</td><td>Contractor / Eskom Holdings SOC Limited/ ECO</td><td>Pre-construction phase (prior to start of construction activities)</td></tr>
</table>

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• Designate specific areas for specific purpose, including storage areas, machinery storage areas, parking areas, waste disposal areas, etc. • Infographics must be available on site in public areas, including information on safety measures, potential harmful fauna (ie. snakes common to the areas, and emergency contact information, including, but not limited to: Snake catchers, Ambulance; Fire Department; the closest hospital, veterinarian (ie: for anti-venom, etc). • Must contain a spill-kit. • Potable chemical toilets: • Plan positioning of Potable Toilets for labour working along the route. • Consider designating a vehicle for the transportation of labourers to toilets. The vehicle can be equipped with a spill-kit. • Ensure chemical toilets are positioned on levelled areas and are protected from wind and rain that could result in them blowing over and spilling waste contents. • Ensure toilets are rented from a registered company, with whom arrangements should be made for cleaning of these toilets on a weekly basis. • Disposal slips/cleaning slips from this company must be obtained following every cleaning and must be filed in the Environmental File. • Ensure an adequate quantity of toilets are provided at each working area. • Hazardous substances including oil/fuel etc. should be: • Stored in bunded areas, on hardened/impermeable surfaces, where the barrels/drums/containers are protected from the natural elements. • Hazardous substances storage area must be treated as a no-go zone to unauthorised personnel. • Appropriate signage indicating what kind hazardous/flammable materials are stored. • Material Safety Data Sheet (MSDSs) must be available. • A fire extinguisher and contact details for the fire department and other emergency numbers must be positioned in close proximity. • A spill kit must be positioned inside the hazardous substances storage area. • Spill kits must be available on site at all times. • Where fuelling does occur on site, a drip tray must be used to contain any spilled fuel. • All construction vehicles must be equipped with drip trays at all times. • All construction vehicles must be properly maintained to prevent leaks. • No vehicle maintenance activities may occur on site for the duration of the construction phase. • Where emergency maintenance is required, such maintenance must be communicated with the independent Environmental Control Officer appointed to oversee the alignment of the construction works with the applicable environmental legislation. • May only be decanted/filled on the aforementioned surface or with the use of drip trays. • If any spills do occur, the soil must be excavated and disposed of as hazardous waste at an appropriately registered facility. **<u>Waste Management:</u>** • Designate areas for temporary waste storage, this area should be: • Protected from wind/rain displacement. • Should be on a levelled surface.		

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• An appropriate number of skips/bins must be made available on site, to accommodate for waste separation of the various types of waste generated. • Waste bins/skips must be weather and animal proof. Ensure weighted covers are positioned on skips/bins, to ensure that animals cannot get into the bins as well as to avoid waste dispersion. • Label bins appropriately. • No waste/excavated soil/ etc. intended to be removed from site may remain on site for more than 90-days. • Ensure that disposal is undertaken when waste has reached 75% capacity of the bin/skip. • The waste must be disposed of at a registered waste disposal facility. The manifest and safe disposal certificates from the facility must be kept in the Environmental File. • Ensure waste receptacles are available where works are being undertaken, this can take the form of black bin bags, etc. however it must: • Be sufficient hold the waste without tearing/spilling. • It must be removed from site on a daily basis and re-established at the start of every day, when works occurs in that area. • Request that the foreman responsible for the labour team in a specific area, is responsible for ensuring that this waste receptacle is utilised, removed and established daily. **Environmental File:** • An environmental file is to be created by the contractor and be situated within the site camp throughout the construction phase and with the applicant thereafter. The environmental file is to include the following: o Copies of all approvals, including Environmental Authorisation, Water Use Licence and any other license/permit/approval. o A copy of the approved EMPr o Copies of waste disposal slips o Copies of chemical toilet cleaning/servicing slips o Disposal slips or cleaning slips (ablution cleaning) o All EMR's (Environmental Monitoring Reports) and ECO instructions o Copies of Environmental Induction Register/S o A Complaints Register o Updated method statements o Material Safety Data Sheets for all hazardous substances utilised on site. o Copies of audit reports o Risk Management, Prevention and Emergency Preparedness Plan o An Incident Register o Copy of induction registers. o Copies of purchase orders for rehabilitation material etc.		
Performance Indicator	Appropriate, well organised, and properly equipped site facilities are available on site prior to commencement of construction activities. The location and set up of the facilities don't impact on the natural resources.	

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8.3. Objective 3: Pre-Construction ECO and Environmental Site Officer (ESO) Inspection and Due Diligence

It is essential that the appointed ECO and ESO be advised of the intended construction start date before construction activities commence on site, in order for the ECO to conduct an initial site inspection to assess the pre-commencement condition of the site. The ECO can also advise on the appropriate siting and demarcation of the site facilities, and the identification and demarcation of the no-go areas. The ECO may also conduct the first round of environmental awareness training at this stage, if any construction workers/sub-contractors are present on site.

<table>
<tr><td colspan="3"><u>Impact Management Objective:</u> Environmental Control Officer and Environmental Site Officer to conduct an inspection prior to the commencement of construction activities on site.</td></tr>
<tr><td>Potential impact to avoid</td><td colspan="2">• Failure to appoint ECO or to notify ECO of commencement prior to commencement may result in non-compliance with the EA.
• If a pre-commencement ECO inspection is not performed, the Construction Contractor may be held liable for environmental degradation that took place prior to the Contractor commencing work on site.</td></tr>
<tr><td>Impact Management Outcome</td><td colspan="2">• Good environmental management is promoted and enforced by the ECO during the full pre-construction and construction phases.
• Site facilities are appropriately located on site.
• Construction workers receive environmental awareness training before commencing work on site.</td></tr>
<tr><td colspan="3">IMPACT MANAGEMENT ACTIONS</td></tr>
<tr><td>Mitigation measure</td><td>Responsible party</td><td>Time period</td></tr>
<tr><td>• The appointed ECO must be advised of the construction start date, before any activities commence on site so that the ECO can perform a pre-commencement inspection and plan for environmental awareness training (see Section 14 and Appendix I), of construction workers.
• The ECO must ensure all relevant items are in place in terms of Section 7 and 8 of this EMPr, where necessary, and all relevant pre-construction requirements have been complied with in terms of the EA.
• Ensure the project timeframe has taken the relevant requirements of the EA and EMPr, into account.
• The ECO, through the correct Eskom administrative procedures, must make the necessary arrangements to take photographs of the site prior to the establishment of ALL facilities (including the site camp), for record purposes.
• The ECO is to ensure that the Environmental File is in place on site, with all the relevant content, and emergency numbers for the relevant authorities are available.
• The ECO is to consult with the Contractor regarding relevant dates for environmental inductions (with regard to new labour).
• If it is recommended that an SEO is appointed, as per the EA, this must be undertaken.</td><td>Contractor/ ECO</td><td>Start of construction phase</td></tr>
<tr><td>Performance Indicator</td><td colspan="2">A pre-commencement site inspection is conducted by the appointed ECO before construction activities commence on site.</td></tr>
</table>

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9. ENVIRONMENTAL IMPACT MANAGEMENT: CONSTRUCTION PHASE

A number of potential environmental impacts may arise during the construction phase of the development. These impacts have been identified and assessed during the Environmental Impact Assessment process. Environmental Management objectives and actions that will prevent the identified potential impacts from arising – or where avoidance is not possible, that will minimise and mitigate the impacts – are provided in this section.

The environmental management actions and mitigation measures prescribed in this section must be implemented throughout the construction phase and must be implemented in conjunction with the general management measures specified in Section 6 of this EMPr, as well as any other conditions which may be stated in the Environmental Authorisation. The Environmental Control Officer must monitor and enforce the implementation of the relevant environmental management measures and may provide guidance on the implementation of these environmental management measures as and when required.

The environmental management objectives (goals) for the Construction phase are:

- Erosion, Earthworks and Land clearance
- Loss of vegetation and disruption to ecological processes: Fynbos vegetation
- Disturbance and displacement of faunal habitat and faunal species of conservation concern
- Creation of multiple job opportunities & capital expenditure
- Air Quality Impact Control
- Noise Impact Control

The environmental management actions that must be implemented in order to achieve the desired objectives and avoid/minimise potential impacts are discussed in more detail in the sections below.

9.1. Objective 1: Erosion, Earthworks and Land Clearance

Impact Management Objective: ***To prevent soil loss, and destruction to heritage resources on site and prevent ground water contamination***			
Potential impact(s) to avoid	Susceptibility of some areas to erosion because of construction related disturbances due to the clearance of vegetation cover and soil disturbance may result in some areas being susceptible to soil erosion, during heavy rainfall events, after completion of the activity. Stockpiled soils and materials can be displaced in heavy rainfall and windy conditions, resulting in sediment dispersal. Likely loss of heritage material findings, such as the discovery of fossil deposits, during excavation and trenching.		
Impact Management Outcome	Stormwater systems are not impacted significantly.		
IMPACT MANAGEMENT ACTIONS			
Mitigation measure		Responsible party	Time period
General: • Any significant spills or leak incidents must be reported in terms of the National Environmental Management Act, 1997 (Act 107 of 1998),the Water Act, 1998 (Act 36 of 1998) and the Eskom Environmental Incident Management Procedure. • Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch. • In the event of the pump dispenser or the hoses being knocked over or ripped off, the fuel supply must be cut off by shear-off valves. • An Emergency Response Plan must be in place for the site, this must clearly describe emergency procedures and include emergency contact numbers. • The Applicant must report any significant incidents that could potentially lead to soil, groundwater pollution and soil. • Monitoring for and removal of weeds, invasive aliens and other non-desirable vegetation must take place regularly, as once alien, or weedy seedlings are established, their control will become more difficult. • Be mindful of rainfall events, and plan construction works during dry season. • Ensure programme of works includes rehabilitation after each section has been backfilled, to avoid bare surfaces remaining exposed for extended periods of time. • Ensure all works on site, remain within the Area of Investigation / Project Footprint identified in this EMPr (this includes stockpiling, if necessary, on site). **Stockpiling:** • Ensure stockpiles do not exceed 2m in height. • Prohibit stockpiling of material close to slopes. • Separate topsoil and subsoils during excavations. • When backfilling, ensure subsoils are backfilled first, and top-soil thereafter. • If topsoil is of poor-quality purchase new topsoil to ensure rehabilitation will be successful. • Remove alien invasives/weeds established on stockpiled soils prior to re-instatement. • Continue with weed management throughout construction, in line with the EMPr.		Contractor/ECO	Construction phase

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Excavations:
• Topsoil & subsoil that has been excavated must be stockpiled separately, along & adjacent to the excavation pits and must be covered with a suitable cover crop or tarpaulin.
• Ensure excavations are undertaken as per specifications.
• Ensure that excavations are not left open overnight. If it is necessary to do so, the excavations must be checked by the safety officer.
• Integrate shoring measures if pit walls are collapsing.
• Whenever any excavation is undertaken, the following procedures shall be adhered to:
  o Topsoil shall be handled as described in this EMP.
  o Excavations shall take place only within the approved demarcated site.
  o The construction site will not be left in any way to deteriorate into an unacceptable state.
  o The excavated area must serve as a final depositing area for waste rock and overburden during the rehabilitation process.
  o Once excavations have been filled with overburden, rocks and coarse natural materials and profiled with acceptable contours (including erosion control measures), the previous stored topsoil shall be returned to its original depth over the area.
 	
Exposed surfaces:
• Implement weed management measures as detailed in the EMPr.
• After backfilling an area, immediately commence with rehabilitation, as detailed in the EMPr, and continue with weed management.
• Ensure dust creation is controlled, as detailed in the EMPr.
• No surface should be left exposed for extended periods of time.
• On completion of construction, the surface of the processing areas especially if compacted due to hauling and dumping operations shall be scarified to a depth of at least 200 mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.
• The area shall be fertilised, if necessary, to allow vegetation to establish rapidly. The site shall be seeded with suitable grasses and local indigenous seed mix. If excavated material is to be utilised for reestablishment, this may not contain alien invasive species, or other waste products, as approved by the ECO.
• Waste (non-biodegradable refuse) will not be permitted to be deposited in the excavations.
• If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the KNPS may require that the soil be analysed and any deleterious effects on the soil arising from the activity, be corrected and the area be seeded with a vegetation seed mix to his or her satisfaction. This must be done in conjunction with the ECO.
• Final rehabilitation must comply with the requirements mention in the Rehabilitation Plan.
• During rehabilitation, the subsoil must be replaced before replacing the topsoil.
 	
Alien invasive management:
• Ensure that alien invasive species are identified, and measures are taken to consistently remove alien invasive species from within the development footprint – implement weed management plan/alien invasive management plan as per EMPr.
• Stockpiled alien invasive species cleared from site, should be contained and removed from site as soon as possible, so as to not allow dispersal.		

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• Indigenous vegetation must be utilised where possible. • Implement rehabilitation plan. **Erosion Management** • Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted once construction is completed. • Topsoil must be stripped and stockpiled separately and replaced on completion. • If natural vegetation re-establishment does not occur, a suitable grass must be applied. • Be mindful of weather conditions that may cause runoff. • Utilise silt fences, if necessary, to capture runoff. **Soil Aspects:** • Sufficient topsoil must be stored for later use during decommissioning, particularly from outcrop areas. • Topsoil shall be removed from all areas where physical disturbance of the surface will occur. • All available topsoil shall be removed after consultation with the botanist and horticulturalist prior to commencement of any operations. • The removed topsoil shall be stored on high ground within the site footprint. • Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of roads. • The stockpiled topsoil shall be protected from being blown away or being eroded. The application of a suitable grass seed/runner mix will facilitate this and reduce the minimise weeds. **Soil Contamination** • Ensure all machinery utilises drip trays. • Drip trays are to be utilised during daily greasing and refuelling of machinery and to catch incidental spills and pollutants. • Drip trays are to be inspected on a weekly basis for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Ensure all machinery is maintained prior to allowing them to be utilised on site. • Utilise spill-kit for contaminated soil and dispose of at a registered site. • If cement is to be mixed, ensure this is done on a bunded impermeable surface, and transferred so that there is no interaction with natural ground. • Any fuel stored on site must be kept in bunded storage tanks. • Cement mixing must be confined to a designated area and must be done on an impervious surface, or premixed cement must be used. • No contaminated soil may be utilised during backfilling. • Make use of a drip tray when refuelling vehicles or equipment on site. • Place drip trays under engines of vehicles or equipment when parked or stored overnight or longer. • Spill kits to clean up accidental spills from vehicles or equipment must be well marked and available on site. • Workers must undergo induction to ensure that they are prepared for rapid cleanup procedures. • Immediately clean oil and fuel spills and dispose of contaminated material (soil, etc.) at licensed waste disposal sites. • Do not release any pollutants, including sediment, sewage, cement, fuel, oil, chemicals, hazardous substances, waste water, etc., into the environment. • Compile a procedure for the storage, handling and transport of different hazardous materials and ensure that it is strictly		

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• adhered to. • Ensure vehicles and equipment are in good working order and drivers and operators are trained with respect to actions to be taken in the case of a spill or leak. **Waste Management** • Utilise waste receptacles on site. • Do not litter on site. • Remove waste receptacles positioned outside of site camp, at the end of every day. • Do not allow food wrappers or food items to build up in any waste receptacles as this will attract scavenging fauna, and other pests. **Stormwater and Erosion Control** • Stormwater Management Plans must be developed in accordance with Section 6.11 of the EMPr. • Stormwater must be prevented from entering or running off site. • To ensure that site is not subjected to excessive erosion and capable of drainage runoff with minimum risk of scour, their slopes should be profiled at a maximum 1:3 gradient. • Diversion channels should be constructed ahead of the open cuts, and above emplacement areas and stockpiles to intercept clean runoff and divert it around disturbed areas into the natural drainage system downstream of the site. • Rehabilitation is necessary to control erosion and sedimentation of all eroded areas (where works will take place). • Existing vegetation must be retained as far as possible to minimise erosion problems. • It is important that the rehabilitation of site is planned and completed in such a way that the runoff water will not cause erosion. • Visual inspections must be done on a regular basis with regard to the stability of water control structure, erosion and siltation. • Sediment-laden runoff from cleared areas must be prevented from entering rivers and streams. • No river or surface water may be affected by silt emanating from the site. • Refuelling and servicing of vehicles must be undertaken at designated service areas and on an impermeable surface. **Site Office / Camp Sites** No site offices or camp sites will be constructed on the site under current operating conditions, existing structures will be used. Where not used, the site camp facilities must comply with Section 6 of this EMPr. **Operating Procedures in the Site** • Construction shall only take place within the approved demarcated site. • The Contractor must ensure that an emergency preparedness plan is in place in order to fight accidental fires or veld fires, should they occur. The adjacent landowners/users/managers should also be informed or otherwise involved. • Enclosed areas for food preparation should be provided and the Contractor must strictly prohibit the use of open fires for cooking and heating purposes. • The use of branches of trees and shrubs for fire-making must be strictly prohibited. • The Contractor should take all reasonable and active steps to avoid increasing the risk of fire through their activities on-site. No fires may be lit except at places approved by the ECO.		

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• The Contractor must ensure that the basic fire-fighting equipment is to the satisfaction of the Local Emergency Services and Koeberg Fire Risk Management. • The Contractor must supply all living quarters, site offices, kitchen areas, workshop areas, materials, stores and any other relevant areas with tested and approved fire-fighting equipment. • Fires and "hot work" must be restricted to demarcated areas. • A braai facility may be considered at the discretion of the Contractor and in consultation with the ECO. The area must be away from flammable stores. All events must be under management's supervision and a fire extinguisher will be immediately available. "Low-smoke" fuels must be used (e.g., charcoal) and smoke control regulations, if applicable, must be considered. • The Contractor must take precautions when working with welding or grinding equipment near potential sources of combustion. Such precautions include having a suitable, tested and approved fire extinguisher immediately at hand and the use of welding curtains. **<u>Management of Heritage and Palaeontological resources</u>** • Fossils and Stone Age artefacts are protected by law. Should anything of a palaeontological/palynological nature be found on site by the Contractor (or any other party), e.g. bones not previously visible, work is to be stopped in that area immediately, and the Environmental Control Officer (ECO) notified. Failure to do so will result in a penalty and this must be carefully explained to workers during the Environmental Education Programme undertaken by the ECO. No palaeontological or archaeological material may be removed from the site without a permit from Heritage Western Cape. • Should palaeontological and/or archaeological material be encountered, the ECO will advise on demarcation of this area and notify the specialist (palaeontologist/archaeologist with appropriate experience) to view material and ascertain whether further study of the area will be required. • Should a specialist confirm a genuine fossil or sub-fossil and recommend further study of the area, work in the applicable area is to cease until further notice. Heritage Western Cape is to be informed immediately by the ECO. • Should any human remains be disturbed, exposed or uncovered during excavation, work in that area must stop and the find shall immediately be reported the South African Police Service and the monitoring specialist. If suspected that the remains are older than 60 years, the SAHRA (021 462 4502) must be informed and established protocols followed. • The removal of discovered palaeontological remains, by a contracted specialist shall be at the applicant's cost and will include the cost of any dating. • All palaeontological and archaeological material must be lodged in an appropriate Iziko Museums of South Africa collection. • If fossils are discovered immediately stop construction and consult with the appropriate heritage body or ECO. The contact details, as well as the detailed steps to be followed are found on Appendix E of this EMPr.		
Performance Indicator	No soil and / or groundwater contamination incidences and potential fossil find disturbed	

9.2. Objective 2: Loss of vegetation and disruption to ecological processes

<u>Impact Management Objective:</u> Reduce the impacts caused by land disturbance and impacts on surrounding indigenous vegetation.

Potential impact(s) to avoid	Prevention of vegetation loss immediately outside the development site/ no-go areas
Impact Management Outcome	The disturbance of indigenous vegetation and faunal species is minimised.

IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
General: • Demarcate the construction site boundaries upon site establishment and limit all activities to inside these boundaries. **Clearance of vegetation:** • Limit the footprint area of the construction activity to the immediate site. • Designate areas outside the Area of Investigation / Project footprint as highlighted in this EMPr. as No-Go areas. • Contractors must drive on existing access roads as far as possible to prevent formation of unnecessary tracks for access roads. • Prohibit temporary storage of building material or soil within areas of natural vegetation falling outside of the construction footprint. • Remove all alien and weed species encountered within areas disturbed by construction activities. Removal of species should take place throughout the construction and operational phases of the development. • Rehabilitate the development footprint and areas disturbed during construction with species indigenous to the vegetation type during the decommissioning phase of the development. • Blanket clearing of vegetation must be limited to the development footprint, and the area to be cleared must be demarcated before any clearing commences. • No clearing outside of footprint to take place. • Such measures include a survey of the route before commencement in order to microsite the route to avoid large or important fynbos species and may require hand excavation in certain areas to reduce the footprint so as not to significantly disturbance. • Topsoil must be striped and stockpiled separately during site preparation and replaced on completion where revegetation will take place. • Any site camps and laydown areas requiring clearing must be located within already disturbed areas. **Alien Invasive Vegetation:** • During the construction phase, alien species must be removed from the working areas as per the National Environmental Management: Biodiversity Act (No. 10 of 2004) requirements. Following the conclusion of the installation activities, the onus will rest on the EA Holder/Landowner to ensure management of the species on site. • A suitable weed management strategy must be implemented by the Contractor during the construction phase and carried through the operational phase. • Weeds and alien species must be cleared by hand before the rehabilitation phase of the areas. Removal of alien plants are to be done according to the Working for Water Guidelines.	Contractor/ Eskom Holdings SOC Ltd	Construction phase

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- The Contractor is responsible for the removal of alien species within all areas disturbed during construction activities. Disturbed areas include (but are not limited to) access roads, construction camps, site areas and temporary storage areas.
- In consultation with relevant authorities, the Project Engineer and/or the Eskom Environmental Group may order the removal of alien plants (when necessary). Areas within the confines of the site are to be included.
- All alien invasive plant material (including brushwood and seeds) should be removed from site and disposed of at a registered waste disposal site. Should brushwood be utilised for soil stabilisation or mulching, it must be seed free.
- After clearing is completed, an appropriate cover crop may be required, should natural re-establishment of grasses not take place in a timely manner.

Fires

- The Contractor must ensure that an emergency preparedness plan is in place in order to fight accidental fires or veld fires, should they occur. The adjacent landowners/users/managers should also be informed or otherwise involved.
- Enclosed areas for food preparation should be provided and the Contractor must strictly prohibit the use of open fires for cooking and heating purposes.
- The use of branches of trees and shrubs for fire-making must be strictly prohibited.
- The Contractor should take all reasonable and active steps to avoid increasing the risk of fire through their activities on-site. No fires may be lit except at places approved by the ECO.
- The Contractor must ensure that the basic fire-fighting equipment is to the satisfaction of the Local Emergency Services.
- The Contractor must supply all living quarters, site offices, kitchen areas, workshop areas, materials, stores and any other relevant areas with tested and approved fire-fighting equipment.
- Fires and "hot work" must be restricted to demarcated areas.

Soil Aspects

- Sufficient topsoil must be stored for later use during decommissioning, particularly from outcrop areas.
- Topsoil shall be removed from all areas where physical disturbance of the surface will occur.
- All available topsoil shall be removed after consultation with the botanist and horticulturalist prior to commencement of any operations.
- The removed topsoil shall be stored on high ground within the footprint of the Area of Investigation, preferably in already transformed areas.
- Topsoils shall be kept separate from overburden and shall not be used for building or maintenance of roads.
- The stockpiled topsoil shall be protected from being blown away or being eroded. The application of a suitable grass seed/runner mix will facilitate this and reduce the minimise weeds.

Dust

- To manage complaints relation to impacts on the nearby communities, a dust register must be developed.
- If required, water spray vehicles will be used to control wind cause by strong winds during activities on the works.
- No over-watering of the cleared areas or road surfaces must take place.
- Wind screens should be used to reduce wind and dust in open areas.
- Should complaints be received by this office, should the local authority require for such an action, it may be necessary for the responsible person to submit an area/site specific Dust Management Plan (DMP), directly to the City's Air Quality Management Branch, for scrutiny.

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• The aforementioned DMP will have to comply with the provisions of the National Dust Control Regulations (GN. 36974) dated 1 November 2013, as well as Chapter 9 of the City of Cape Town Air Quality Management By-law, 2016. • Once authorised, the DMP must be instated on site and must be adhered to.		

Performance Indicator	Construction team limit disturbance to the surrounding vegetation.

9.3. Objective 3: Disturbance and displacement of Faunal habitat and faunal species of conservation concern

Impact Management Objective: ***Reduce the impacts caused by land disturbance and impacts on the faunal habitat and faunal species of conservation concern***		
Potential impact(s) to avoid	• Permanent loss of faunal habitat cover due to construction activities. • Increased susceptibility to erosion caused by construction activities. • Disturbance and displacement of faunal species, their processes.	
Impact Management Outcome	The disturbance of faunal habitat and faunal species is minimised.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
General: • Ensure contact numbers for emergency assistance is available. • Reptiles such as lizards are less mobile compared to mammals, and some mortalities could arise. • Should vegetation regrowth be significant prior to the commencement of the construction phase of the proposed cable infrastructure upgrade, it is recommended that a faunal search and rescue be conducted before construction commences, although experience has shown that there could still be some mortalities as these species are mobile and may thus move onto site once construction is underway. • A reptile handler should be on call for such circumstances. • No animals are to be harmed or killed during the course of operations. • It is important that clearing activities are kept to the minimum and take place in a phased manner. This allows animal species to move into safe areas and prevents wind and water erosion of the cleared areas. • Workers are NOT allowed to collect any flora or snare any faunal species. All flora and fauna remain the property of the landowner and must not be disturbed, upset or used without their expressed consent. • Trees and shrubs that are directly affected by the operations may be felled or cleared but only by the expressed written permission of the ECO. • Where landscaping will be done, indigenous vegetation must be used as far as reasonably possible. • Materials used during construction must be sourced and transported responsibly to minimise the risk of further introductions of new IAPs and contamination of the site, and especially the areas surrounding the site. • Should animals wander onto site, the animals must be captured and released into the adjoining nature reserve grounds. • The site is to be always kept clean and tidy so as to not attract the animals to the site.	Contractor	Construction phase

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Performance Indicator	Construction team limit disturbance to the surrounding vegetation and faunal species.

9.4. Objective 4: Job creation

Impact Management Objective: ***To create employment opportunities with potential for skills transfer, for members of the local community.***			
Potential impact(s) to be promoted.	A number of temporary job opportunities for skilled and unskilled labour will be created during the construction phase of the development. Potential transfer of skills from more experienced workers to less experienced workers. Increase in business for local businesses within the construction industry.		
Impact Management Outcome	Social benefits from the employment opportunities created during the construction phase.		
IMPACT MANAGEMENT ACTIONS			
Promotion measure		Responsible party	Time period
Positive, therefore no mitigation necessary. It should be noted that this impact will benefit the local community and address the issue of unemployment within the Western Cape, and South Africa, particularly for unskilled labourers, although temporary. Improving quality of life. The applicant is recommended to source local labour, contractors and sub-contractors, as well as utilise local materials and suppliers.		Eskom Holdings SOC Ltd.	Construction phase
Performance Indicator	A substantial proportion of the construction team is from the local community, with preference given to historically disadvantaged individuals and, where appropriate, unskilled labourers. Skills transfer from experienced to less experienced workers is actively encouraged on site.		

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9.5. Objective 5: Air Quality Control

Impact Management Objective: ***Minimise the effect on air quality from dust and emissions complaints.***			
Potential impact(s) to be avoided.	• Generated dust from exposed soil, and ground disturbance. • Construction vehicles emitting exhaust fumes		
Impact Management Outcome	• Minimise the incidence of dust. • Minimised emission related complaints.		
IMPACT MANAGEMENT ACTIONS			
Mitigation measure		Responsible party	Time period
General: • Dust suppression methods, such as wetting with non-potable such water or laying must be used during the construction phase of the proposed cable infrastructure upgrade. • Stockpiles and spoil heaps must be covered to prevent fugitive dust. • All construction vehicles must be appropriately maintained to minimise exhaust Emissions. • All mitigation measures described in the EMPr relating to dust and vehicle emissions must be adhered to. • All spills or accidents involving such materials are to be recorded by the Contractor. • A phased vegetation clearance procedure must be encouraged. • Vegetation rehabilitation must take place as installation and backfilling activities in any one area has concluded. • Contractor to provide details to ECO. • Vehicular speed must be controlled at all times with no indiscriminatory driving permitted by any construction vehicles, or the general public. • Construction vehicles shall comply with speed limits and haul distances shall be minimised. Material loads shall be suitably covered and secured during transportation. • During high wind conditions, the ER will evaluate the situation and make recommendations as to whether dust damping measures are adequate, or weather working will cease altogether until the wind speed drops to an acceptable level. • Exposed soil and material stockpiles shall be protected against wind erosion and the location of stockpiles shall take into consideration the prevailing wind directions and locations of sensitive receptors. • The Contractor shall implement dust suppression measures (e.g. water spray vehicles (must be used in line with the Water Use By-Laws), covering of material stockpiles, chemical soil binders, shade cloth erected on fencing etc.) if and when required. Straw, brush packs and chipping must be considered prior to the use of water spray vehicles. • Plastic, shade cloth or other suitable material may be used for covering stockpiles. Topsoil stock piles are not to be covered with plastic or shade cloth but hessian or similar to prevent composting occurring.		Contractor	Construction phase
Performance Indicator	No air quality complaints, good visibility and no fume complaints.		

9.6. Objective 6: Noise and Visual Impact Control

Impact Management Objective: ***Minimised noise complaints***			
Potential impact(s) to be avoided.	• Noise from construction vehicles and machinery.		
Impact Management Outcome	• Avoid excessive noise due to construction activities		
IMPACT MANAGEMENT ACTIONS			
Mitigation measure		Responsible party	Time period
Noise • All construction vehicles must be fitted with silencers to avoid excessive noise. • All construction vehicles must be equipped with muffled reverse sirens (which are to the standard of the Occupational Health & Safety Act (Act 85 of 1993). • No constructions activities are permitted between 17:00 and 7:00 unless previously agreed upon between the Contacting team and the Municipality. • Construction workers are to remain within the designated site boundary at all time. • Eating areas are to be located away from any residential units/homesteads and tourists' attractions within proximity to the current working areas. • All equipment to be adequately maintained and kept in good working order to reduce noise. • All employees must be given the necessary ear protection gear. • Noise levels must comply with the SANS 100103 – 0994 (recommended noise levels), as well as the Western Cape Noise Control Regulations (Provincial Notice 200/2013) of 20 June 2013. • All mitigation measures relating to noise control as described in the EMPr must be adhered to. **Visual** • A clean site policy must be adopted at all time during the construction phase. • Where possible, storage and disposal of waste must take place in a sustainable manner, where clearly marked recycle bins must be provided to workers at the site camp. • The visual impact experienced during the construction phase would be relatively short term and be mitigated by good housekeeping and regular removal of rubble on the site. • An approved EMPr must be adhered to in order to minimize the visual impacts of construction phase activities. • An ECO must be appointed. The EMPr must be enforced and monitored by the ECO. • The site must be kept clean and tidy at all times. • No stockpiles may exceed 2m in height.		Contractor/ ECO	Construction phase
Performance Indicator	No noise or visual impact complaints.		

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10. ENVIRONMENTAL IMPACT MANAGEMENT: POST CONSTRUCTION REHABILITATION PHASE & OPERATIONAL PHASE

After all construction activities have ceased, the sites must be cleared of all construction related equipment, materials, facilities and waste. In addition, all disturbed surfaces – including disturbed areas around the structures and all areas utilised for site facilities – must be stabilised, rehabilitated and provided with a suitable cover. All temporary access roads constructed must be rehabilitated and access must be restricted from the public.

The environmental management objectives (goals) for this phase are:

- Alien invasive species clearance and site management
- Visual Impact

10.1. Objective 1: Alien invasive species clearance, rehabilitation and site management

Impact Management Objective: Alien invasive species controlled and reduced		
Potential impact(s) to be avoided	• The spread of alien invasive species to other areas. • Increased fire risk • Potential loss to biodiversity • Environmental degradation from the change of vegetation structure and soil chemistry.	
Impact Management Outcome	Limited infestation and establishment of alien invasive species population and limit fire risks	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
<u>General</u> • An Emergency Response Plan must be in place for the site, this must clearly describe emergency procedures and include emergency contact numbers <u>Alien invasive vegetation management</u> • Spread of alien invasive vegetation associated with the soil disturbance caused by construction must be managed appropriately. • The risk of spreading of invasive alien vegetation is expected to be low significance after the proposed mitigation measures are implemented found in Appendix G. • After the clearing of any invasive alien vegetation, follow-up clearances must be undertaken twice a year for two years, with a view to becoming standard practice by the Koeberg Facilities Management/Environmental Group. • Following the conclusion of the installation activities in any one area, any disturbed areas must be rehabilitated by the Contractor, with suitable indigenous flora as soon as possible. The onus will rest on the EA Holder to ensure the prolonged success of the rehabilitation measures. • Removal of weedy or invasive plant material is to be done by hand and in accordance with applicable and recognised methods. No machinery may be used. • Areas that have been cleared must be considered for replanting with the locally indigenous species. Clearing must take place before invasive alien plants flower and set seed. All cleared material is to be removed from site to a suitable refuse facility.	Developer / Eskom Holdings SOC Ltd/ Contractor	• Operational phase

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• If herbicides are to be used, only registered herbicides are to be used. • All equipment must be suited to the task at hand and be in good working order. • Herbicide application must be done in such a way as to prevent over-spray and spray drift. Herbicide application should not be undertaken during windy conditions. • No water may be collected from any natural sources for mixing of herbicide or cleaning of equipment. • Alien invasive vegetation management around the site is to take place in accordance with the Alien Vegetation Management Programme provided in the Environmental Management Programme. • The Vegetation Rehabilitation Plan included in the Environmental Management Programme must be implemented on site until successful rehabilitation has been confirmed by the ECO. **Fires:** • Operational Fire extinguishers must be present on site. • During construction and post-construction activities no uncontrolled fires are allowed. • Ensure emergency numbers are readily available with a working phone on site, the foreman responsible for the team is to ensure that he has these emergency numbers, and can contact emergency services immediately,		
Performance Indicator	Limited alien species, protected indigenous vegetation, limit fire risks.	

10.2. Objective 2: Visual impact

Impact Management Objective: Visual Impact		
Potential impact(s) to be avoided.	Unsightly views of the clearance activities associated with the project due to delayed revegetation and rehabilitation.	
Impact Management Outcome	• Development remains fire wise. • Development protected from wildfires. • Implementation of the National Veld and Forest Fire Act (Act No. 101 of 1998) • No unnecessary disturbance to the view.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
General: • Rehabilitate the area where the clearance and installation activities may have impacted. • Follow the rehabilitation plan and ensure that all alien invasives are cleared and indigenous cover is successful. • Re-vegetation and landscaping with plant species indigenous to the Cape Flats Dune Strandveld biome must be undertaken, where possible. • The Applicant must ensure that the vegetation is reinstated and monitor vegetation growth to ensure regrowth until its fully established.	Developer / Eskom Holdings SOC Ltd.	Operational phase
Performance Indicator	• No alien vegetation present. • No dead vegetation present.	

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11. MONITORING COMPLIANCE, ROLES AND RESPONSIBILITIES

This EMPr, once approved by the competent authority (DFFE), must be seen as binding to the *Holder*, and any person acting on the *Holder's* behalf, including but not limited to agents, employees, associates, contractors and service providers.

The *Holder* and all other persons who may be directly involved in the development are also bound by their general Duty of Care, as stated in Section 28 of the National Environmental Management Act, 1998:

> ***Duty of Care:***
> *"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 cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment"*

11.1. Environmental Authorisation (EA) *Holder* / Proponent

It is the EA *Holder's* responsibility to ensure that all agents/contractors/subconsultants appointed to provide services towards the fulfilment of the proposed activities, are fully aware of the EMPr, Environmental Authorisation and any other relevant licenses/permits, which must be considered prior to actioning any activity on site. The EA *Holder* may choose to hold the Contractor responsible for any fines incurred as a result of non-compliant activities during implementation, however this must be done through the agent and by legal procedure. The EA *Holder* must ensure that:

- Financial allowances are incorporated into the Bill of Quantities, to accommodate for the requirements of the licenses and EMPr.
- An appropriately experienced/qualified Environmental Control Officer (ECO) is appointed to monitor compliance, prior to commencement of site establishment activities.
- Should the granted EA stipulate the need for the appointment of an Environmental Auditor, ensure an appropriated experienced/qualified Environmental Auditor is appointed to audit compliance, prior to commencement of site establishment activities.

The *Holder* is ultimately responsible for ensuring that the environmental management measures specified in this EMPr, as well as any other conditions specified by the competent authority, are implemented and adhered to during the construction and post-construction phase (maintenance activities) of the proposed cable infrastructure upgrade.

The *Holder* or delegated party is responsible for monitoring and maintenance during the post-construction phase. The *Holder* must ensure that all appointed service providers, contractors and maintenance workers are capable of complying with all statutory requirements of this EMPr and the conditions of the Environmental Authorisation. The *Holder* is responsible for ensuring that this EMPr and the conditions of the Environmental Authorisation are implemented and adhered to during construction.

The *Holder* or appointed consultant is responsible for identifying emergency situations that may arise during operational and maintenance activities and must formulate appropriate emergency response procedures for these emergency scenarios.

During the post-construction and maintenance phase of the project the following maintenance measures are to be implemented in order to ensure the functioning of the infrastructure when needed:

- Regular checks must be executed by the Eskom Environmental Group in order to ensure that revegetation within the areas cleared as part of the construction activities have been successful.

- A monitoring register is to be upheld by the EA *Holder* indicating when the checks to the vegetation was undertaken. Where rehabilitation was deemed insufficient, and appropriately qualified specialist must be approached to provide further revegetation measures.

11.2. Contractor

It is the Contractors responsibility to be aware of the requirements of the EMPr, Environmental Authorisation and any other relevant permits/licences and ensure that all labour, appointed sub-contractors/consultants are also made aware of these documents. The Contractor is required to ensure that as per EMPr, EA conditions, and other permits or licences:

- Time allowances/considerations are given to accommodate all relevant activities, when compiling the project programme of works.
- Financial allowances are made to meet all relevant requirements.
- All activities are implemented in an environmentally conscience manner, in line with the EMPr.
- Produce method statements for approval by the ECO and Site Engineer, prior to implementing activities.

The "Construction Contractor" is the entity responsible for undertaking the physical construction of the residential development. The construction contractor is responsible for ensuring that all environmental management measures specified in this EMPr and in the EA are implemented during the pre-construction, construction and post-construction rehabilitation phases, unless agreed otherwise with the Holder. The contractor will be responsible for all costs incurred, in relation to any non-compliances which may occur during implementation of construction activities/rehabilitation activities. The contractor must therefore make adequate financial provision for the implementation of all prescribed measures, in accordance with the Bill of Quantities and the EMPr.

It is strongly recommended that the Construction Contractor appoint an Environmental Site Officer (ESO), who will act as the Contractor's representative to enforce compliance with the conditions of this EMPr, throughout all phases of construction.

- In addition to the above, the Construction Contractor is responsible for the following:
- Identify emergency situations that may arise as a result of construction activities and formulate appropriate emergency response procedures.
- Ensure that all construction workers, including sub-consultants and service providers, undergo environmental awareness training prior to commencing work on site, or as soon as possible thereafter.
- Compile the required method statements, which must be to the satisfaction of the ECO, before commencing with the activity to be governed by the method statement.
- Respond to concerns or issues identified by the ECO, as relates to environmental management, and implement the appropriate management or remediation measures, at the Contractor's own expense (unless agreed otherwise).
- Any damage to the surrounding environment (site camp location and outskirts of working corridor) must be noted by the contractor with photo evidence. Any damage identified throughout the operational phase of the proposed extension will be the contractor's responsibility to repair.
- Should third parties be called to the site to perform clean up and rehabilitation procedures, the Construction Contractor will be responsible for all associated costs.

Note that failure to comply with the requirements and conditions of this EMPr and the Environmental Authorisation may result in fines or other penalties being levied against the Construction Contractor by the Competent Authority.

- **Construction Phase Record Keeping**

A copy of the approved EMPr, the Environmental Authorisation and any relevant construction method statements must be kept on site at all times during pre-construction, construction and rehabilitation activities. The ECO Reports must be retained by the *Holder* for a period of at least 5 years and must be provided to the Competent Authority upon request.

The set up and organisation of the site camp is paramount to ensuring compliance. An environmental file is to be created by the contractor and be situated within the site camp throughout the construction phase and with the applicant thereafter. The environmental file is to include the following;

- A copy of the Environmental Authorisation
- A copy of General Authorisation or any other relative permits
- A copy of the approved EMPr
- Updated Waste slips
- Disposal slips or cleaning slips (ablution cleaning)
- All EMR's (Environmental Monitoring Reports) and ECO instructions
- Copies of Environmental induction register/s
- The Protocol for chance Palaeontological Findings
- A complaints register
- Updated method statements
- Any and all emergency procedure/s applicable to site activities
- An Incident Register

- **Method Statements**

The Competent Authority and/or the ECO may require the *Holder* or Construction Contractor to submit Method Statements for one or more construction-related activity, or any aspect of the management of the site, before the activity is undertaken or during the performance of the activity, if the activity is causing or may cause significant environmental damage, or pose a health and safety risk.

Method Statements need not be complex and lengthy, but must clearly state **how**, **when** and **where** the activity concerned will be undertaken, and must specify **who** will be responsible for undertaking each component of that activity. Method Statements must be prepared by the Construction Contractor and submitted to the ECO for approval before undertaking the activity concerned.

The ECO and / or Competent Authority have the authority to request method statements for activities, including but not limited to:

- Establishment of site camp and stockpile area.
- Site clearing
- Cement/ concrete batching, disposal and emergency contingencies.
- Topsoil and sub-soil storage/ stockpiling.
- Storage of fuels and hazardous chemicals and emergency contingencies.
- Waste management system.
- Storm water management and control.
- Dust Mitigation
- Alien invasive plant species management.
- Fire Control & Fire Emergency Plan.
- Emergency preparedness plan / emergency response procedure.
- Post-construction rehabilitation.

The ECO has the authority to prevent activities from being undertaken until such time as a satisfactory Method Statement has been submitted to the ECO and approved by the ECO.

11.3. ECO Monitoring

The appointed ECO is responsible for undertaking regular site visits to monitor and report on the implementation of the EMPr and adherence to the conditions of the Environmental Authorisation during the pre-construction, construction and post-construction rehabilitation phases. The ECO is not required to monitor the site during the operational (maintenance) phase of the development.

Frequency of ECO visits:

- The ECO must conduct **monthly** site visits during the construction phase, in addition to the start-up and closure inspections.
- The ECO must conduct a site visit 3 months after practical completion of the construction period.
- The ECO has the discretion to undertake additional visits if he / she feels this is justified due to the actions of the contractors, and to make *ad hoc* visits in order to ensure compliance.

Monitoring Reports:

- Must be produced **monthly** and submitted to the Competent Authority, Engineer, Proponent and Contractor.

- **Competency of the ECO**

The ECO must be independent of the Environmental Auditor, Holder, Engineer, Construction Contractor and their service providers. The appointed ECO must be suitably qualified and experienced and must be able to demonstrate that he / she is of sufficient competency to undertake the required task. The ECO must preferably be a resident in close proximity to the development area to ensure quick response if required. The ECO must work in close co-operation with the Construction Contractor, resident engineer or EO (where applicable) and all contractors in order to identify potential problems before they occur, and provide suitable guidance as to how the identified problems (environmental impacts) can be avoided.

- **Duties of the ECO**

The duties of the ECO include, but are not limited to:

- Conduct a pre-construction site inspection to ascertain the pre-commencement condition of the site (i.e. the status quo);
    - Conduct environmental awareness training, which must include;
    - A brief description of the surrounding environment
    - Importance of the EMPr
    - Roles and responsibilities
    - Identified environmental risks
    - Mitigation measures to be implemented
    - No-go areas
    - Emergency procedures (Hydrocarbon spill)

- Undertake regular site visits to monitor compliance with all mitigation, monitoring and management measures contained in the EMPr and the Environmental Authorisation, during the pre-construction, construction and rehabilitation phases of the development;

- Evaluate the achievement of the performance indicators associated with each impact management objective specified in this EMPr;
- Liaise with site contractors, engineers and other members of the development team with regard to the requirements of the EMPr; Provide guidance as and when required regarding the implementation of the environmental management measures contained in the EMPr and EA, so as to assist the Holder and contractor in remaining compliant with these measures;
- Assist in finding environmentally acceptable solutions to construction problems;
- Ensure that the working areas, site camp facilities, access roads and no-go areas are properly demarcated;
- Ensure that proper topsoil management practices are adhered to on site;
- Ensure that proper waste management & pollution prevention strategies are practised on site;
- Examine method statements, where required;
- Recommend additional environmental protection measures, should this be necessary;
- Furnish contractors with verbal warnings in case of contravention of the EMPr;
- Recommend that the competent authority furnish errant contractors with predetermined fines, when verbal and / or written warnings are ignored;
- Ensure satisfactory rehabilitation of disturbed areas on site, after construction is complete;
- Keep detailed records of all site activities that may pertain to the environment, and produce monthly compliance-monitoring reports (ECO Reports) for submission to the Holder, and the Competent Authority at regular intervals during the construction phase;
- Submit a final post-construction inspection report, within 6 months of completion of the construction phase. The audit report must detail the rehabilitation measures undertaken, describe all major incidents or issues of non-compliance and any issues or aspects that require attention or follow-up.
- All ECO Reports and Inspection Reports must be submitted to the Holder and Competent Authority.

- **Authority of the ECO**

The ECO has the authority to recommend to the decision-making authorities that they suspend all works (or part thereof) occurring on site, should any action being undertaken on site not comply with the environmental requirements, and where such actions pose a serious threat to any element of the surrounding environment.

The ECO has the authority to issue instructions to the Construction Contractor and/or Holder, regarding measures that must be implemented on site in order to ensure compliance with the EMPr and Environmental Authorisation, and/or to prevent environmental degradation or pollution from occurring.

The ECO has the authority to issue verbal and written warnings to contractors. Should verbal and written instructions and/or warnings be ignored, the ECO has the authority to request the Competent Authority to issue pre-determined fines or other penalties.

The ECO has the authority to report incidents of non-compliance to the Competent Authority at any time.

- **ECO Inspections - Written Records**

The following record-keeping during the pre-construction, construction and rehabilitation phases of the development is recommended:

- The ECO must complete an ECO Checklist after each ECO site visit.
- The ECO must compile an ECO monitoring report and submit this to the *Holder*, the Contractor and the Competent Authority (the latter only if required by the Competent Authority). The monthly reports must be a summary of the ECO inspections from the preceding month, and must highlight the key concerns/ issues on site, instances of non- compliance with the EA and EMPr, all instructions issued to the contractor, actions taken and aspects that still require attention.

- All ECO reports and ECO instructions must be retained on file at least for the duration of the construction period (retaining reports for a period of at least 5 years is recommended, in the event that the Competent Authority must request information).
- A record (minutes) of construction site meetings, liaison site meetings between the ECO and resident engineer or contractor, monitoring reports, ECO instructions and ECO observations must be clearly documented and filed on a master file off-site for safe keeping.
- It is recommended that a site register (incident register) be kept on site at the site office for the recording of any environmental incidents (e.g. fires, spills etc.), observations which are contrary to the stipulations within the EMPr, and any other contravention deemed necessary for the attention of the resident engineer. Actions taken to remedy the incidents must also be recorded.
- A complaints register must be kept on site in which complaints by any member of the public must be logged.

The ECO must compile a final post-construction audit report, within 6 months of completion of each construction phase. The audit report must detail the rehabilitation measures undertaken, describe all major incidents or issues of non-compliance and any issues or aspects that require attention or follow-up.

11.4. ESO Monitoring

Due to the nature of this development, an Environmental Site Officer (ESO) must be appointed. The site officer will be responsible for implementing and monitoring the site activities daily. This individual must be appointed by the Main Contractor. The ESO will be responsible for actively managing activities on-site. The ESO must:

- Have a site diary wherein they report all environmental incidents daily;
- Ensure that all environmental filing relevant to the project is up to date;
- Keep proper Incident reports on record of all incidents, including all remediation action-documents. These reports and documents must be made available to the ECO, Site Contractor, Site Engineer and the DFFE when required;
- Be present and give report on all incidents at all site meetings for the project.

11.5. Auditing by Environmental Auditor

In accordance with the requirements of the Environmental Impact Assessment Regulations, 2014 (as amended), the Holder of the Environmental Authorisation must, for the period that the Environmental Authorisation is valid, appoint a suitably qualified independent (external) person to conduct an environmental audit to audit compliance with the conditions of the Environmental Authorisation and the EMPr. As per Section 34 of the EIA Regulations (GN R326 of 2017), the duty of an Environmental Auditor is to be in dependent and is responsible for:

- Ensuring compliance with the conditions of the environmental authorisation and the EMPr; and
- Submit an environmental audit report to the relevant competent authority, which provides verifiable findings, in a structured and systematic manner, as per Appendix 7 of GN R326.
- Any amendments to the EMPr, which must be recorded in Appendix F.

The Holder is responsible for appointing, managing and remunerating the appointed auditor. The auditor may **not** be the appointed ECO.

The appointed auditor is to be provided with the completed EMR's and Checklists, as well as any other crucial information that may be relevant or requested (incident report, waybills etc) in order to effectively report on the level of compliance with the conditions of the environmental authorisation and

the EMPr. The appointed auditor must undertake environmental audits during prior to the commencement of each phase, at the following stages;

- **Within the first year of construction.**
- **3 months after the practical completion of each phase of construction thereafter.**
- **Or in accordance with the frequency specified in the Environmental Authorisation.**

Following each audit, the environmental auditor must submit an audit report to the Competent Authority (in this instance the DFFE) Environmental auditing and environmental audit reports must adhere to the requirements of the amended 2014 Environmental Impact Assessment Regulations, in particular Section 34 (*Auditing of Compliance with Environmental Authorisation, Environmental Management Programme*) and Appendix 7 (*Objective and Content of Environmental Audit Report*)

The audit report must provide verifiable findings on the level of compliance with the provisions/ conditions of the Environmental Authorisation and the EMPr and must also comment on the ability of the measures contained in this EMPr to sufficiently avoid, manage and mitigate environmental impacts.
Where the findings of the audit report indicate that the impact management measures stated in the EMPr are insufficient to adequately address environmental impacts, recommendations as to how the EMPr must be amended so as to address the identified shortcomings must be made and submitted to the competent authority together with the audit report.

The Environmental auditor must undertake an audit as per Appendix 7 of GN R326 at the following stages;

- At 50% completion of the project timeline.
- At practical completion of the construction period.
- 3 months after practical completion of the construction period.

12. PENALTIES, CLAIMS AND DAMAGES

The contractor will be responsible for all costs incurred in the rehabilitation of the site and for ensuring that all procedures required to rehabilitate the site are implemented. If third parties are called to the site to perform clean up and rehabilitation procedures, the contractor will be responsible for all costs. The competent authority may impose penalties on the *Holder* or any of the contractors if conditions contained in this EMPr are contravened. This would be based on an agreement or contract between the *Holder* and the contractor.

Penalties could be imposed in terms of Chapter 11 of the Western Cape Bill on Planning and Development as published in the Extraordinary Provincial Gazette No 5183, 3 October 1997, and would be applicable for any action which leads to damage to the natural environment. Please note that the payment of any fines in terms of the contract shall not absolve the offender from being liable from prosecution in terms of any law.

In cases where severe environmental damage occurs, the competent authority law enforcement division may take legal action against the responsible parties. The reasons for this could include, among others:

- Not implementing the conditions of the EMPr;
- Spillage that results in environmental damage;
- Incorrect handling and storage of construction materials and chemicals;
- Sensitive areas that are not clearly demarcated;
- Performing ablutions in areas other than facilities provided for such actions; and
- Occurrence of unattended and out of control fire.

The Contractor shall comply with the environmental specifications and requirements on an ongoing basis and any failure on his part to do so will entitle the ECO to issue the contractor with penalty / fine as described in the following section.

The following offences, level of severity and value of the financial fines have been drafted according to the sensitivities on the proposed site, the mitigation measures proposed, and the construction methods proposed. It must be noted that the level of severity is at the discretion of the ECO and any offences or fines will be recorded in the ECO's monitoring report. The fineable offences are not limited to the table below, additional offences may be applied by the ECO with prior agreement with the EA *Holder*.

The following fine structure shall apply:

Table 3: Fines and offences

Finable Transgression	Min Fine	Max Fine
Failure to notify the ECO of the commencement of construction or pre-construction activities, prior to the commencement of such activities.	R1 000	R2 000
Failure to comply with the provisions relating to the demarcation of the working area, site camp and associated facilities, and the maintenance of the demarcated boundaries.	R1 000	R5 000
Failure to comply with the provisions relating to the demarcation of all "no-go" areas, and the maintenance of the demarcated boundaries.	R2 000	R5 000
Failure to provide secured ablution facilities (1:30 ratio) on site.	R500	R15 000
Failure to comply with the provisions relating to the clearance of vegetation on site.	R2 000	R5 000
Clearance of indigenous vegetation (regardless of the density of alien vegetation present) outside of the demarcated boundaries of the working area and site camp.	R2 500	R15 000
Failure to apply herbicide to alien vegetation when required to do so.	R500	R2 000
Failure to adhere to designated access routes and/or the driving of vehicles through undeveloped vegetation outside of the demarcated working area or site camp.	R1 000	R5 000
Movement of vehicles and/or construction workers in no-go areas;	R1 000	R10 000
Parking or storage of vehicles, machinery, tools and other materials or equipment related to the Contractors operations, within designated "no-go" areas.	R1 000	R10 000
Parking or storage of vehicles, machinery, tools and other materials or equipment related to the Contractors operations, outside of the areas demarcated for such parking/storage.	R500	R5 000
Failure to comply with the provisions relating to the management of topsoil and subsoil.	R1 000	R5 000
Excessive excavation of material in areas not depicted for such purpose / activity on the approved design plans.	R2 500	R10 000
Failure to comply with the provisions relating to waste management on site i.e. recycling of wastes.	R500	R5 000
Failure to comply with the provisions relating to the storage, use and management of hazardous substances and fuels on site and/or the spillage of hydrocarbons or hazardous substances on site leading to environmental damage.	R1 000	R10 000
Mixing cement or concrete on bare ground and/or failure to comply with any other provision regarding cement/ concrete batching.	R1 000	R5 000
Failure to provide adequate fire-fighting equipment (in working order) on site at all times and/or failure to comply with the provisions relating to fire prevention and/or the occurrence of unattended or out of control fires.	R500	R5 000
Refueling of vehicles, machinery or equipment outside of the designated refueling area.	R500	R2 000

Maintenance of vehicles, machinery or equipment outside of the designated maintenance yard, except in emergencies.	R500	R2 000
Failure to undertake refueling or repairs over a drip tray or other impermeable bunded surface to collect spilled hydrocarbons (fuels, lubricants, oils etc.) and other hazardous substances; failure to provide drip trays under fuel burning equipment (including pumps and generators) where there is a risk of hydrocarbon leakage.	R500	R2 000
Failure to produce a required method statement/s to the engineer's and ECO's satisfaction prior to undertaking the activity concerned and/or failure to adhere to an approved method statement.	R1 000	R5 000

The above does not absolve the transgressor from being prosecuted in terms of the ***National Environmental Management Act (Act 107 of 1998)*** which may result in further penalties and other actions by State Departments.

13. EMERGENCY PREPAREDNESS

13.1. Emergency response procedures

The potential environmental risks that may arise as a result of construction activities, or during the maintenance of the structures must be identified, and appropriate emergency response procedures must be compiled for each emergency scenario. Potential environmental emergencies that require an emergency response include, but are not limited to, unplanned fires, sewage spills, spills of hazardous chemicals, snake bites etc.

The construction contractor Is responsible for identifying potential significant environmental risks that may arise as a result of pre-construction, construction and rehabilitation activities, and the contractor must formulate emergency response procedures for these potential incidents.

The ECO, contractor and the EA *Holder* are responsible for ensuring that all construction workers appointed to the project are aware of the emergency procedures and are properly trained on how to identify and respond to an emergency incident during construction.

Please note that this EMPr only applies to the labourers, contractors, site managers, and engineers appointed, unless specified otherwise, to fulfil the requirements of the proposed cable infrastructure upgrade.

An emergency procedure must clearly indicate who will take charge during an emergency, and the roles and responsibilities of workers and authorities during an emergency.

The construction contractor is responsible for ensuring that the requirements of the Occupational Health & Safety Act (Act 85 of 1993) (OHS Act) are adhered to during the construction phase. The *Holder* is responsible for ensuring compliance with the OHS Act during the undertaking of operational and maintenance activities.

All workers on site during the construction and operational phase must be properly educated about possible emergency incidents that may arise, how to avoid such incidents and how to respond in the event of an incident. "Refresher" training sessions on emergency procedures must be held if needed.

All workers must ideally be given basic fire-awareness training, as well as be advised on basic firefighting and safety techniques. Fire-fighting equipment must be available on-site during construction and operational activities.

All workers must be trained on how to respond in the event of a spill of a hazardous substance (fuel, chemicals etc.), if hazardous substances are to be used on site.

A spill kit for containing and/or neutralising spills of hazardous substances (e.g. hydrocarbons) must be available on site at all times, when hazardous substances are present.

Any incidents of pollution or spillage of hazardous materials during construction must be reported to the ECO as soon as possible. The ECO must then (depending on the nature of the spill) notify the relevant authorities, if needed. During the operational phase of the development, the EA *Holder* is responsible for notifying the relevant authorities of any pollution incidents that arise.

A first aid kit must be available on site at all times.

Emergency contact numbers (including the fire department, police and ambulance) must be prominently displayed on site at all times and regularly updated.

All emergency incidents must be recorded in a site incident log. The cause of the incident, the measures taken in response to the incident and the efficacy of those measures must also be recorded. This information must be used to inform future emergency preparedness planning, and to avoid prevent similar incidents from arising again.

13.2. Emergency preparedness

The following measures must be implemented, as appropriate, to ensure effective responses to emergencies:

- All workers on site during the construction and operational phase must be properly educated about possible emergency incidents that may arise, how to avoid such incidents and how to respond in the event of an incident. "Refresher" training sessions on emergency procedures must be held if needed.
- All workers must ideally be given basic fire-awareness training, as well as be advised on basic firefighting and safety techniques. Fire-fighting equipment must be available on-site during construction and maintenance activities.
- All workers must be trained on how to respond in the event of a spill of a hazardous substance (fuel, chemicals etc.), if hazardous substances are to be used on site.
- A spill kit for containing and/or neutralising spills of hazardous substances (e.g. hydrocarbons) must be available on site at all times, when hazardous substances are present.
- Any incidents of pollution or spillage of hazardous materials during construction must be reported to the ECO as soon as possible. The ECO must then (depending on the nature of the spill) notify the relevant authorities, if needed. During the operational phase of the development, the *Holder* is responsible for notifying the relevant authorities of any pollution incidents that arise as a result of maintenance activities.
- A first aid kit must be available on site at all times.
- Emergency contact numbers (including the fire department, police and ambulance) must be prominently displayed on site at all times and regularly updated.
- All emergency incidents must be recorded in a site incident log. The cause of the incident, the measures taken in response to the incident and the efficacy of those measures must also be

recorded. This information must be used to inform future emergency preparedness planning, and to avoid prevent similar incidents from arising again.

14. ENVIRONMENTAL AWARENESS PLAN

Environmental Awareness Training must be conducted prior to the commencement of construction activities. It is the *Holder's* responsibility to familiarise himself/herself with the content and requirements of this EMPr. The *Holder* is also responsible to ensure that the contractor and all labourers working on site during the construction phase are familiar with the content of this EMPr.

The following actions must be taken to ensure that all relevant parties are aware of their environmental role and duties:

- This EMPr must be kept on site at all times.
- The provisions of this EMPr and the conditions of the Environmental Authorisation must be explained in detail to all staff during Awareness Training.
- Training booklets will be handed out to all labourers and must be explained to them.
- Weekly checks to be done by the *Holder's* environmental representative who must be on site at all times.
- The ECO to conduct frequent site visits.
- Monthly monitoring reports to be compiled by the ECO. These reports will be circulated to all parties involved (including the *Holder*, contractor and the competent authority where required).

The Construction Contractor must make allowance for all construction site staff, including all subcontractors that will be working at the site, to attend environmental awareness training sessions (undertaken by the ECO) before commencing any work on site. During this training, the ECO will explain the EMPr, and the conditions contained therein. Attention will be given to the construction process and how the EMPr fits into this process. Other items relating to sound environmental management which must be discussed and explained during the environmental awareness training sessions include:

- The demarcated "no-go" areas.
- General dos and don'ts of the site.
- Making of fires.
- Waste management, use of waste receptacles and littering.
- Use of the toilets provided.
- Use and control of construction materials and equipment etc.
- Control, maintenance and refuelling of vehicles.
- Methods for cleaning up any spillage.
- Access and road safety.
- Emergency procedures (e.g. in case of fire, spillage etc.).
- Explanation of the importance of complying with the EMPr.
- Discussion of the potential environmental impacts of construction activities.
- The benefits of improved personal performance.
- Employees' roles and responsibilities, including emergency preparedness.
- Explanation of the mitigation measures that must be implemented when carrying out their activities.
- Explanation of the specifics of this EMPr and its specification (no-go areas, etc.)
- Explanation of the management structure of individuals responsible for matters pertaining to the EMPr.
- General "best practice" principles, with regards to the protection of environmental resources.

Environmental awareness training and education must be ongoing throughout the construction phase and must be undertaken regularly if deemed necessary (especially if it becomes apparent that there are repeat contraventions of the conditions of the EMPr), or as new workers come to site. Translators must be utilised where needed.

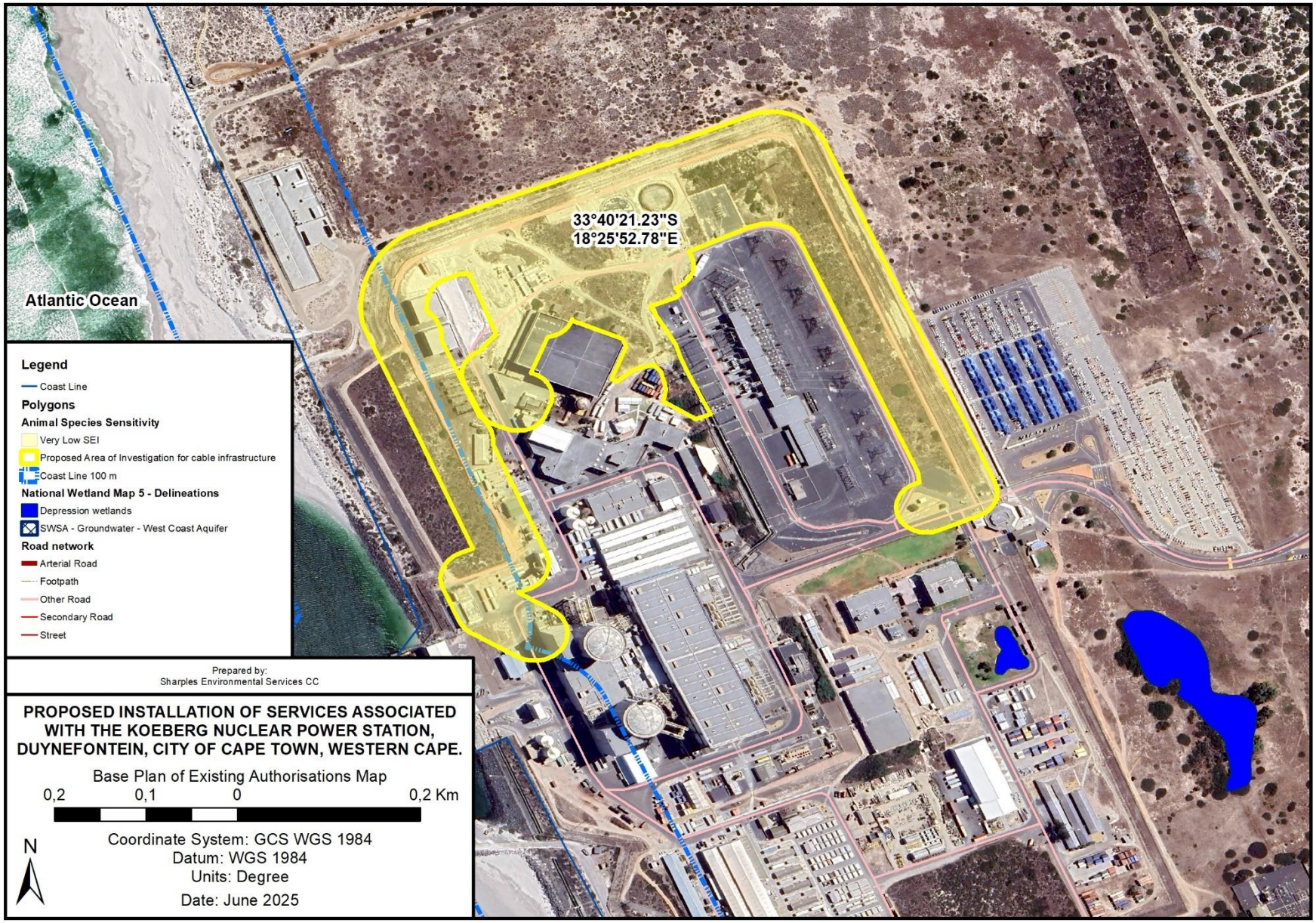
Notwithstanding the specific provisions of this particular section it is incumbent upon the Contractor to convey the sentiments of the EMPr to all personnel involved with the works.

APPENDIX A – CURRICULUM VITAES OF EAPS

APPENDIX B – LAYOUT PLAN


Centre Point
a
b
c
d
e
Legend
Locality Points
Proposed Area of Investigation for cable infrastructure
Prepared by:
Sharples Environmental Services CC
PROPOSED INSTALLATION OF SERVICES ASSOCIATED WITH THE KOEBERG NUCLEAR POWER STATION, DUYNEFONTEIN, CITY OF CAPE TOWN, WESTERN CAPE.
Base Plan of Existing Authorisations Map
0,2 0,1 0 0,2 Km
N
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Date: June 2025

APPENDIX C – MAP OF ENVIRONMENTAL SENSITIVITIES


33°40'21.23"S
18°25'52.78"E
Atlantic Ocean
Legend
Coast Line
Polygons
Animal Species Sensitivity
Very Low SEI
Proposed Area of Investigation for cable infrastructure
Coast Line 100 m
National Wetland Map 5 - Delineations
Depression wetlands
SWSA - Groundwater - West Coast Aquifer
Road network
Arterial Road
Footpath
Other Road
Secondary Road
Street
Prepared by:
Sharples Environmental Services CC
PROPOSED INSTALLATION OF SERVICES ASSOCIATED WITH THE KOEBERG NUCLEAR POWER STATION, DUYNEFONTEIN, CITY OF CAPE TOWN, WESTERN CAPE.
Base Plan of Existing Authorisations Map
0,2 0,1 0 0,2 Km
N
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Date: June 2025

APPENDIX D - SCREENING TOOL

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE ENVIRONMENTAL SENSITIVITY

EIA Reference number: TBC

Project name: Koeberg Services Infrastructure Installation

Project title: THE PROPOSED INSTALLATION OF SERVICES ASSOCIATED WITH THE KOEBERG NUCLEAR POWER PLANT, DUYNEFONTEIN, CITY OF CAPE TOWN. WESTERN CAPE.

Date screening report generated: 23/06/2025 14:05:06

Applicant: Eskom Holdings SOC Ltd

Compiler: Sharples Environmental Services cc

Compiler signature: .....

Application Category: Transformation of land|Indigenous vegetation

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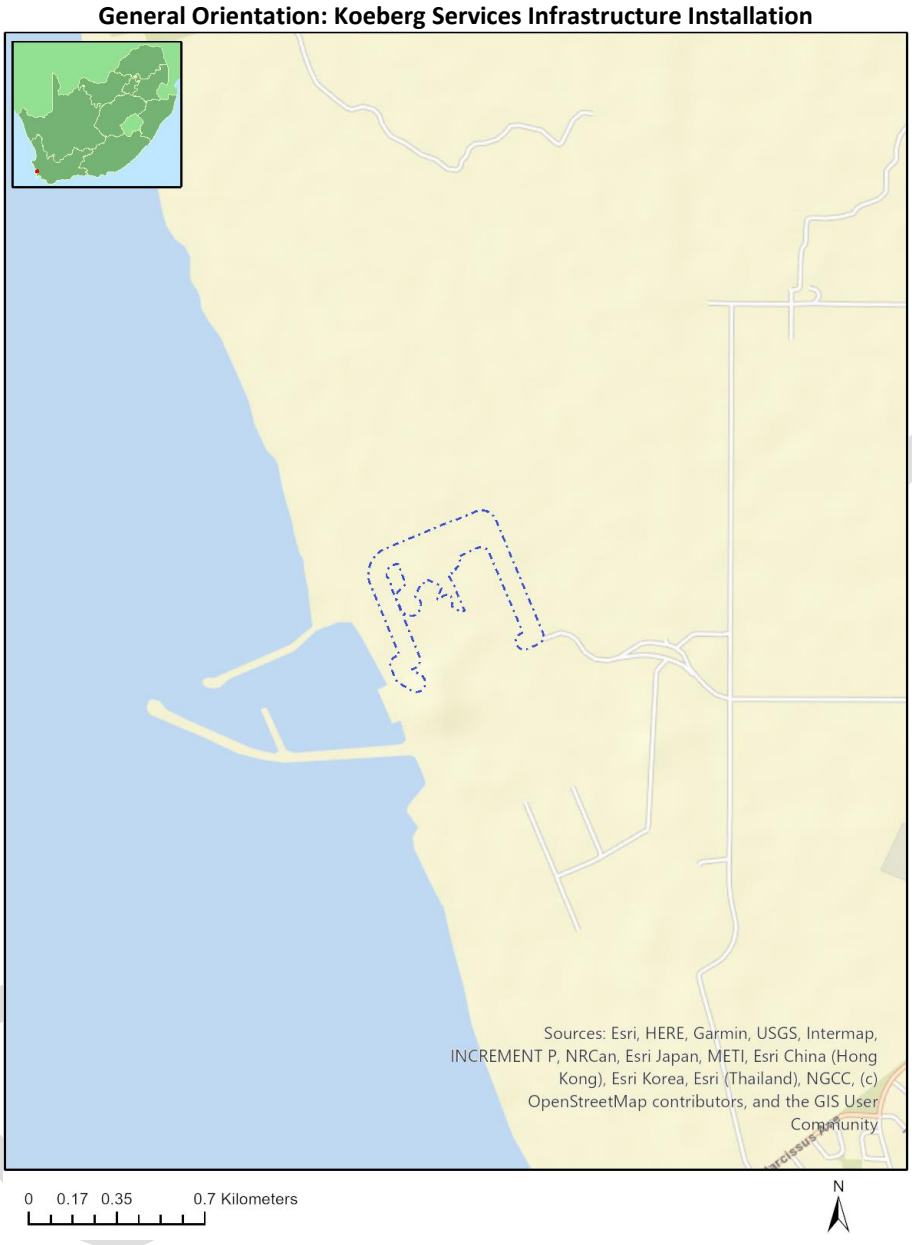
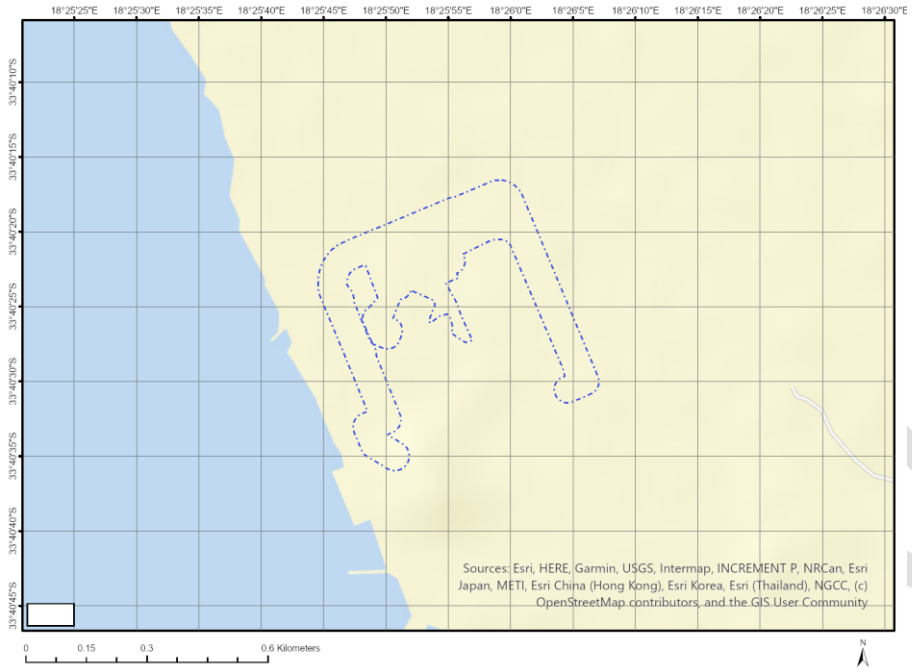
Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1		1552	0	33°39'58.74S	18°26'41.65E	Farm
2		34	0	33°40'7.57S	18°26'42.53E	Farm Portion
3		1375	0	33°40'46.11S	18°25'53.62E	Farm Portion
4		1552	0	33°40'1.47S	18°26'42.67E	Farm Portion

Development footprint[1] vertices:
No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	12/12/20/2109/AM2	Solar PV	Approved	22.8
2	12/12/20/2109	Solar PV	Approved	22.8
3	12/12/20/2638/AM2	Wind	Approved	14.5
4	12/12/20/2217/AM2	Wind	Approved	21.2

[1] "development footprint", means the area within the site on which the development will take place and incudes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

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5	12/12/20/2109/AM3	Solar PV	Approved	22.8
6	12/12/20/2638	Wind	Approved	14.5
7	12/12/20/2217	Wind	Approved	21.3
8	12/12/20/2638/AM3	Wind	Approved	14.5
9	12/12/20/2217/AM3	Wind	Approved	21.2
10	12/12/20/2109/AM1	Solar PV	Approved	22.8

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: **Transformation of land|Indigenous vegetation**.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-Central corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf
Main Electricity Transmission Substation	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Distribution_Transmission.pdf
Main Electricity Distribution Substation	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Distribution_Transmission.pdf
South African Protected Areas	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SAPAD_OR_2024_Q4_Metadata.pdf
South African Conservation Areas	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SACAD_OR_2024_Q4_Metadata.pdf

Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme		X		

Disclaimer applies

Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme			X	
Paleontology Theme	X			
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the known impacts associated with the proposed development, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

No	Specialist assessment	Assessment Protocol
1	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/GuidanceforHIA.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/GuidanceforPIA.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
7	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
8	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

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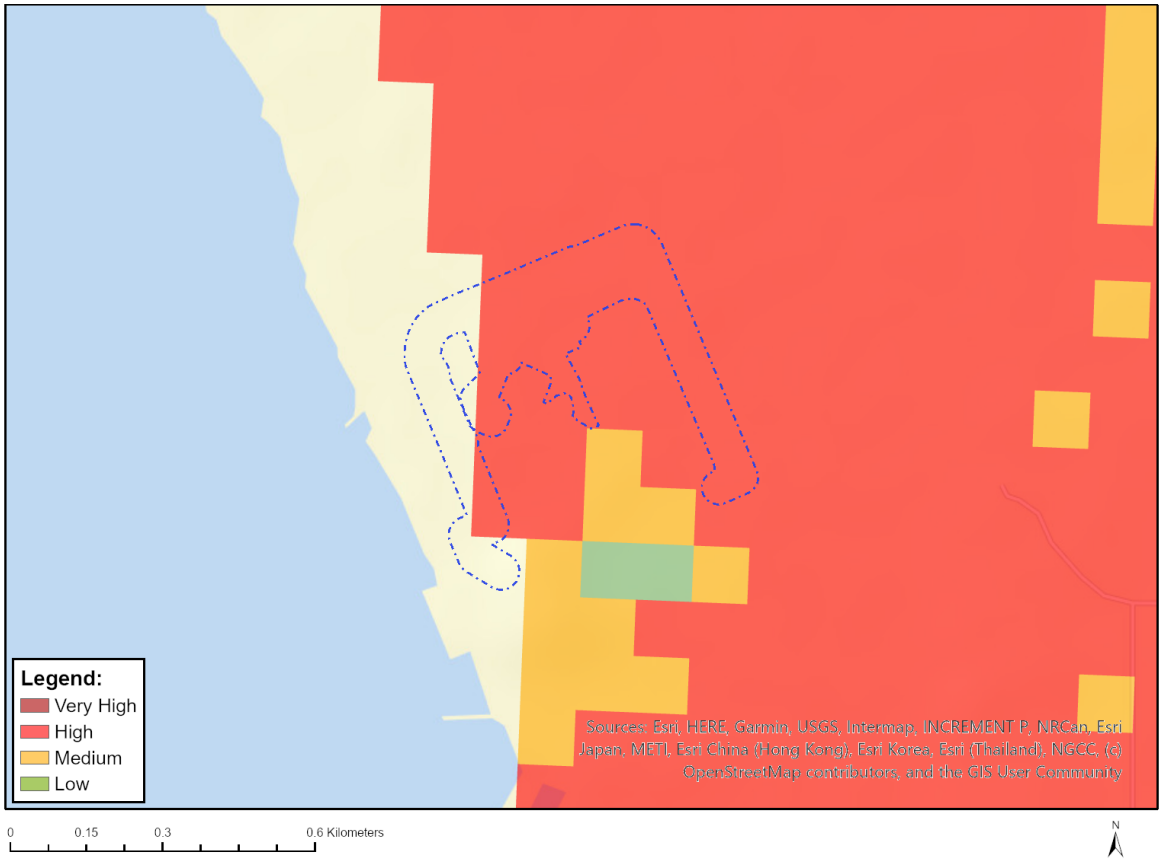
Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

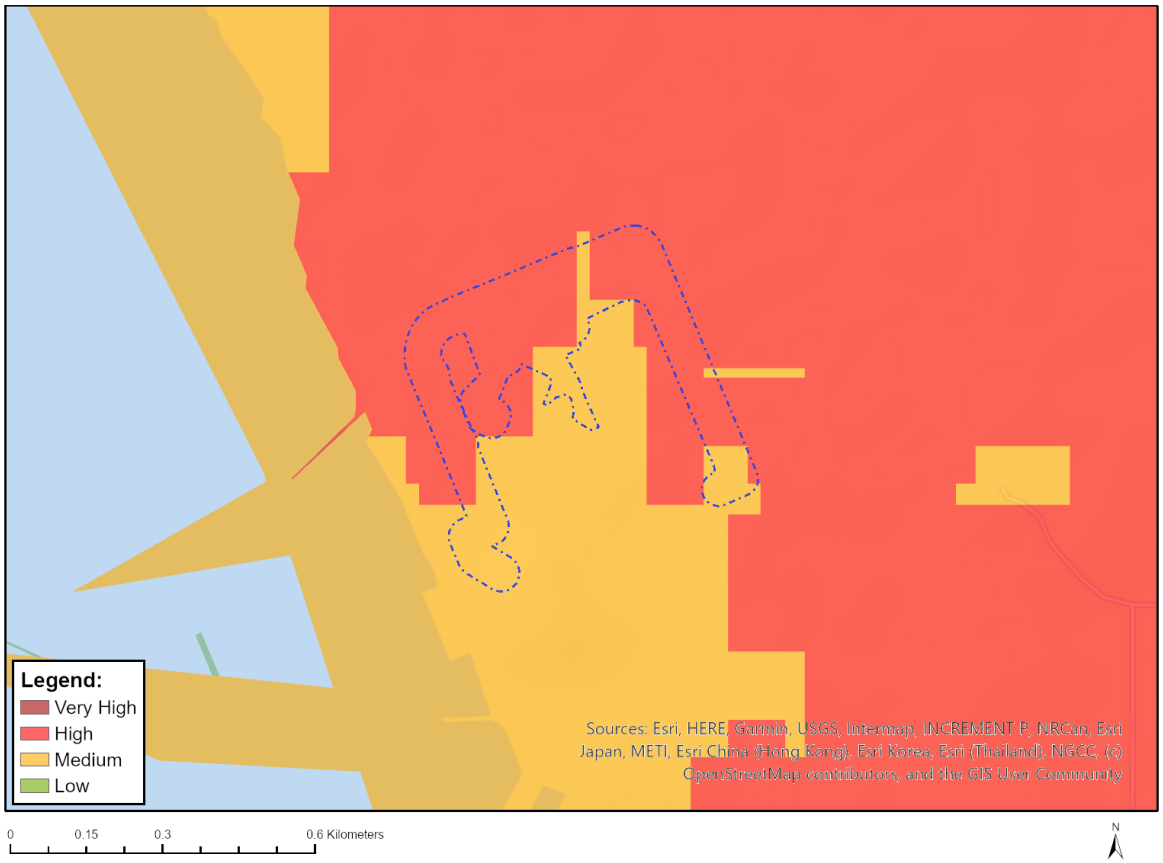


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	08. Moderate
High	09. Moderate-High
Medium	07. Low-Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Circus maurus
High	Aves-Afrotis afra
High	Aves-Circus ranivorus
Medium	Invertebrate-Pachysoma aesculapius
Medium	Invertebrate-Bullacris obliqua

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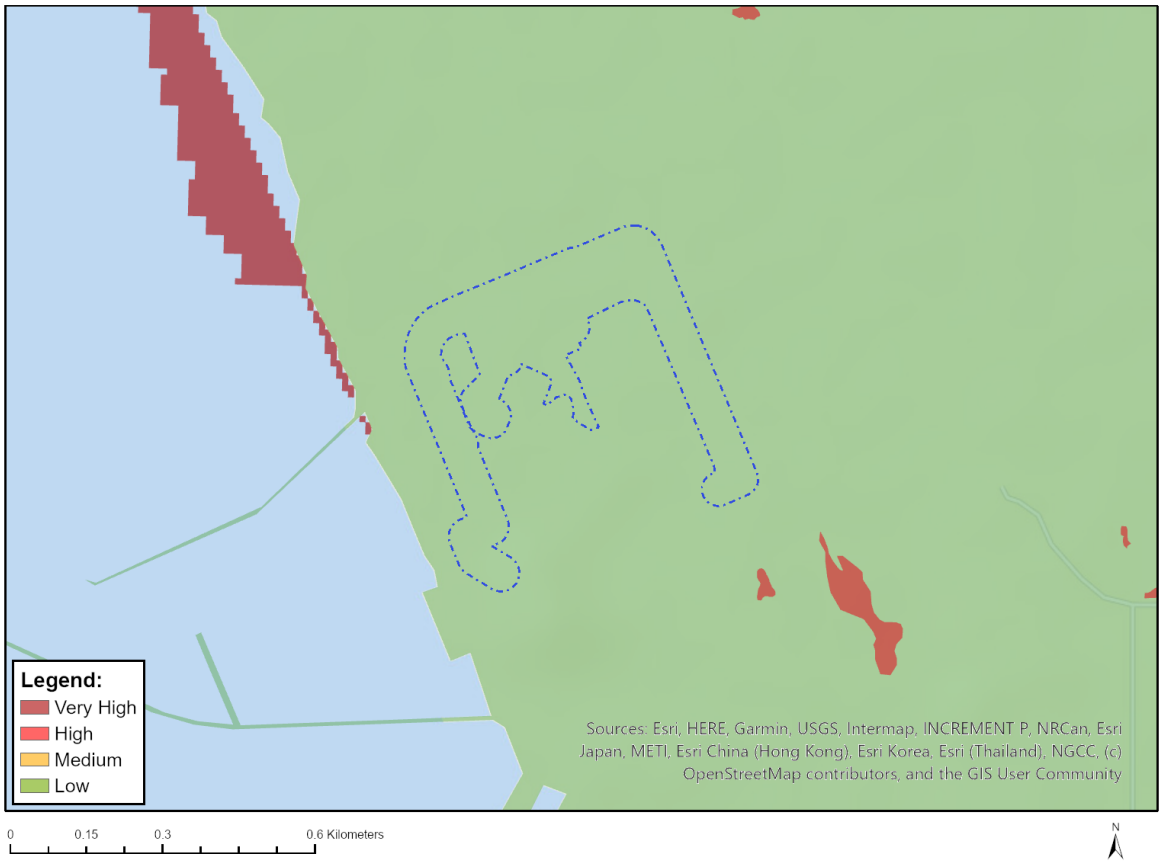
MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

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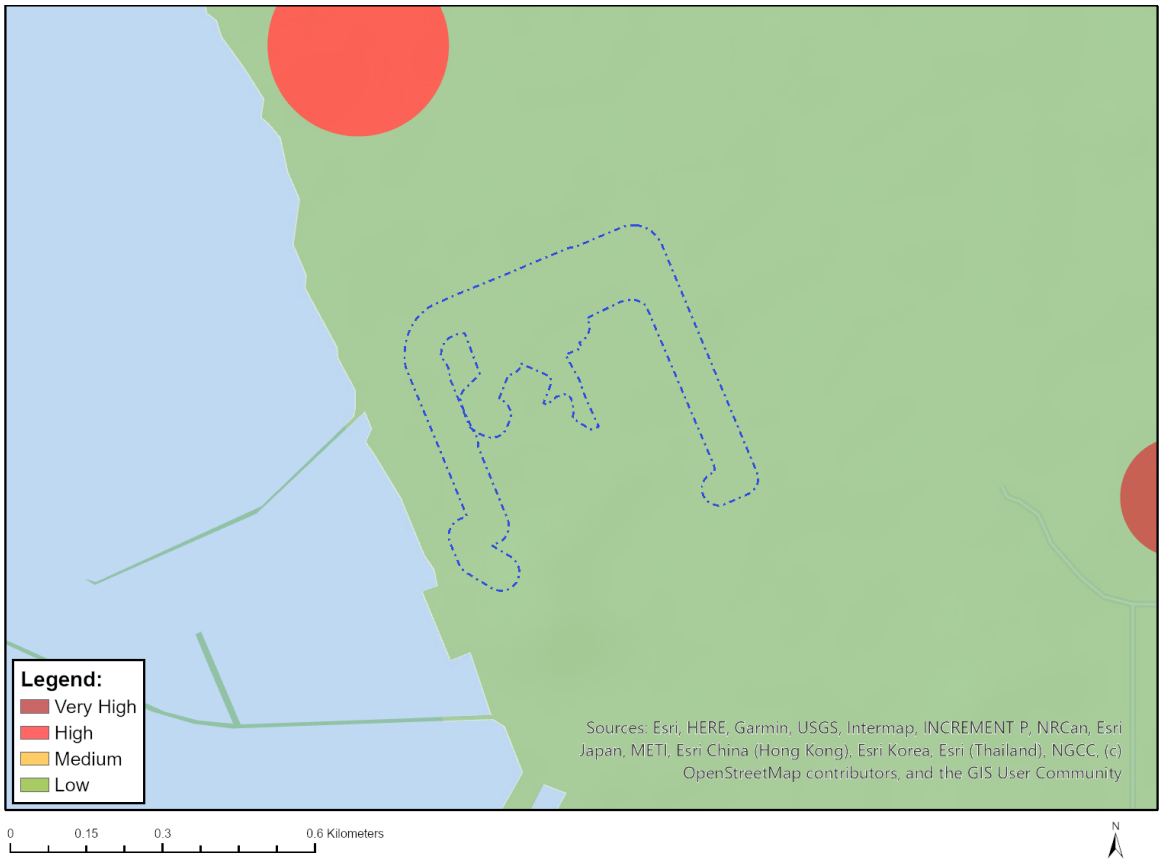
MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

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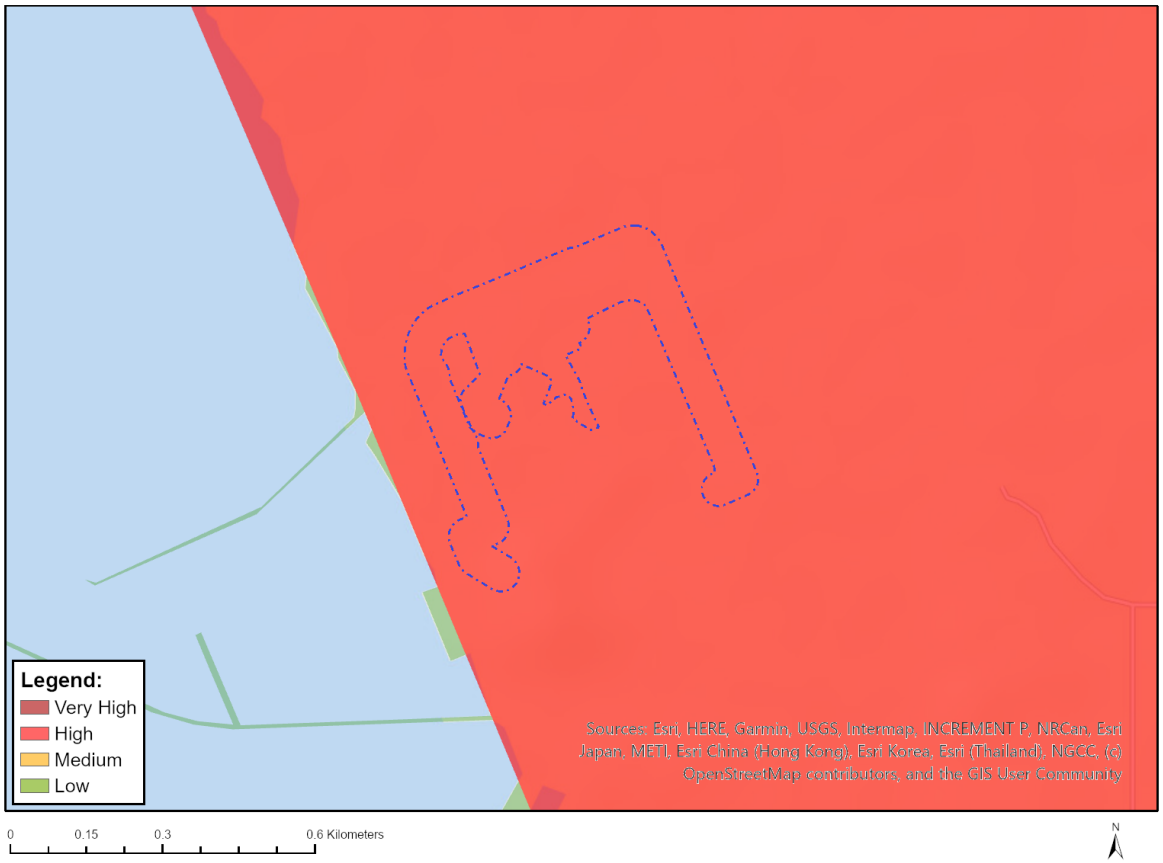
MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



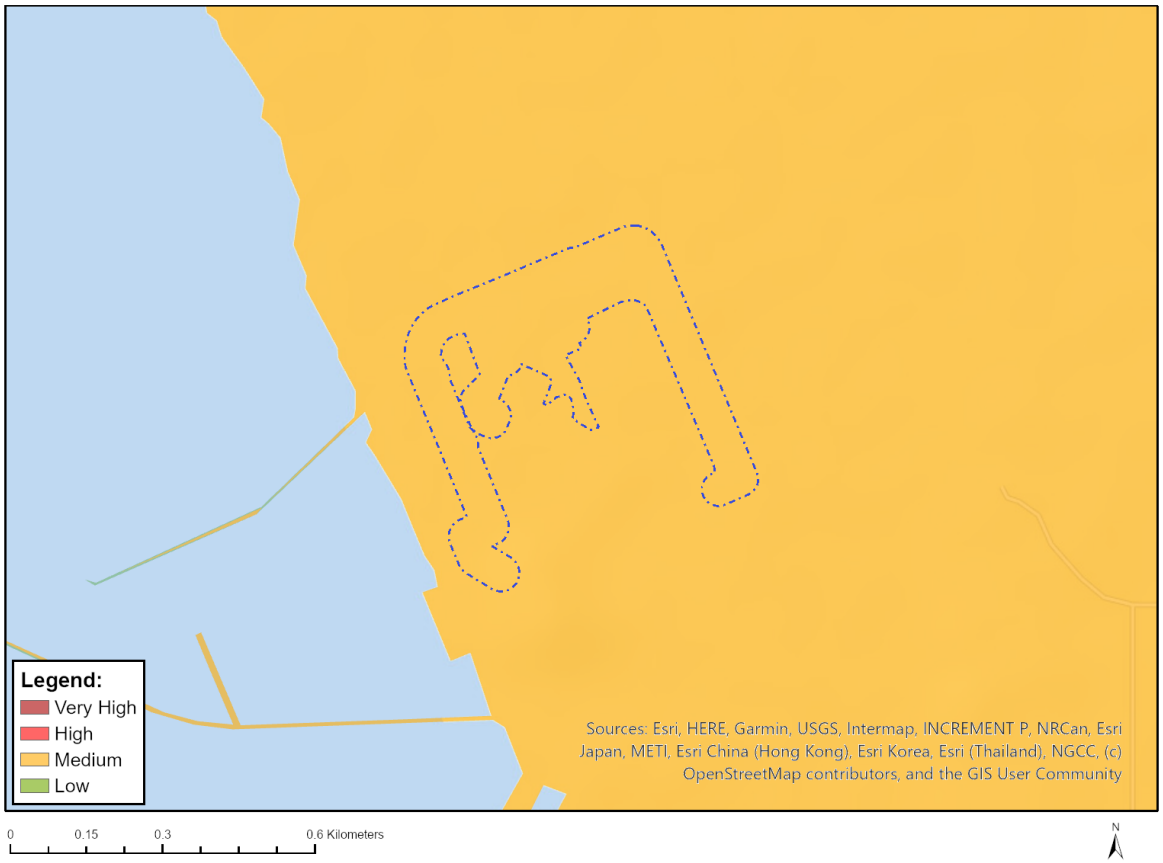
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome
High	Dangerous and restricted airspace as demarcated

Disclaimer applies
23/06/2025

MAP OF RELATIVE DEFENCE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Military and Defence Site

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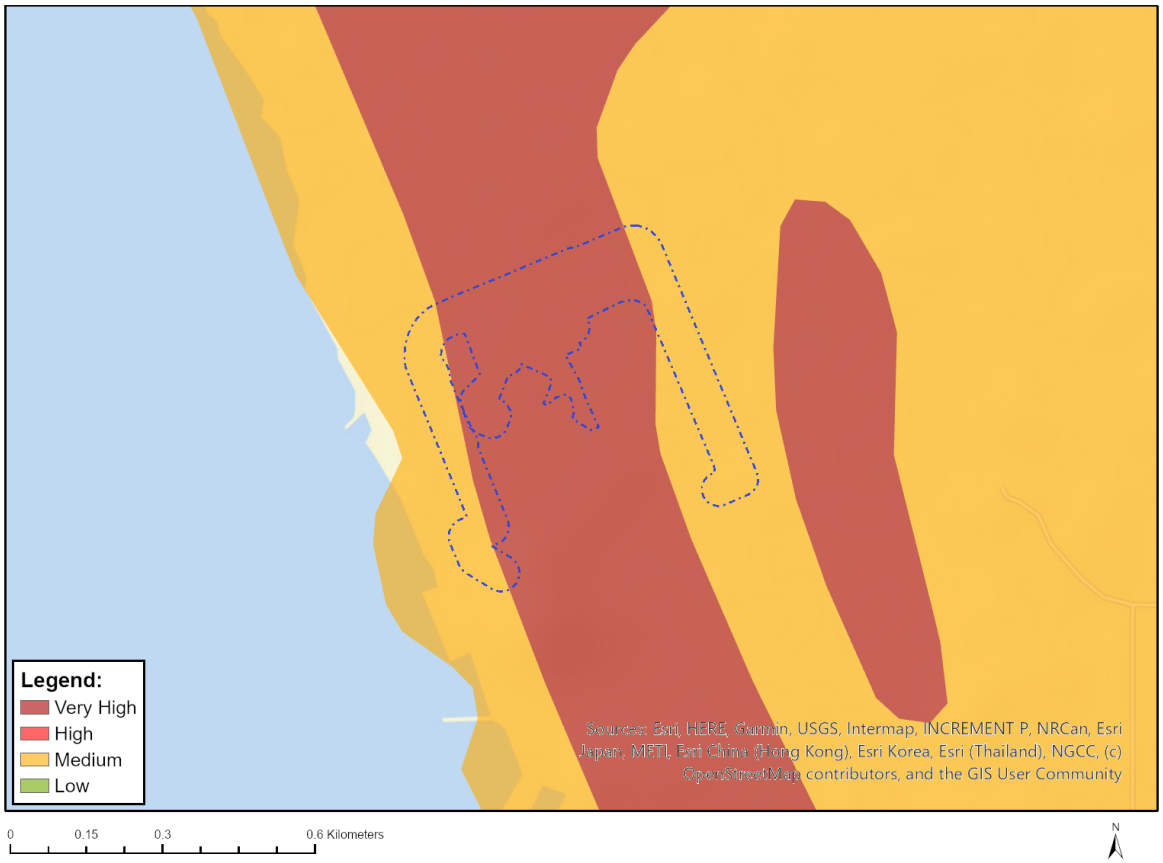
MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

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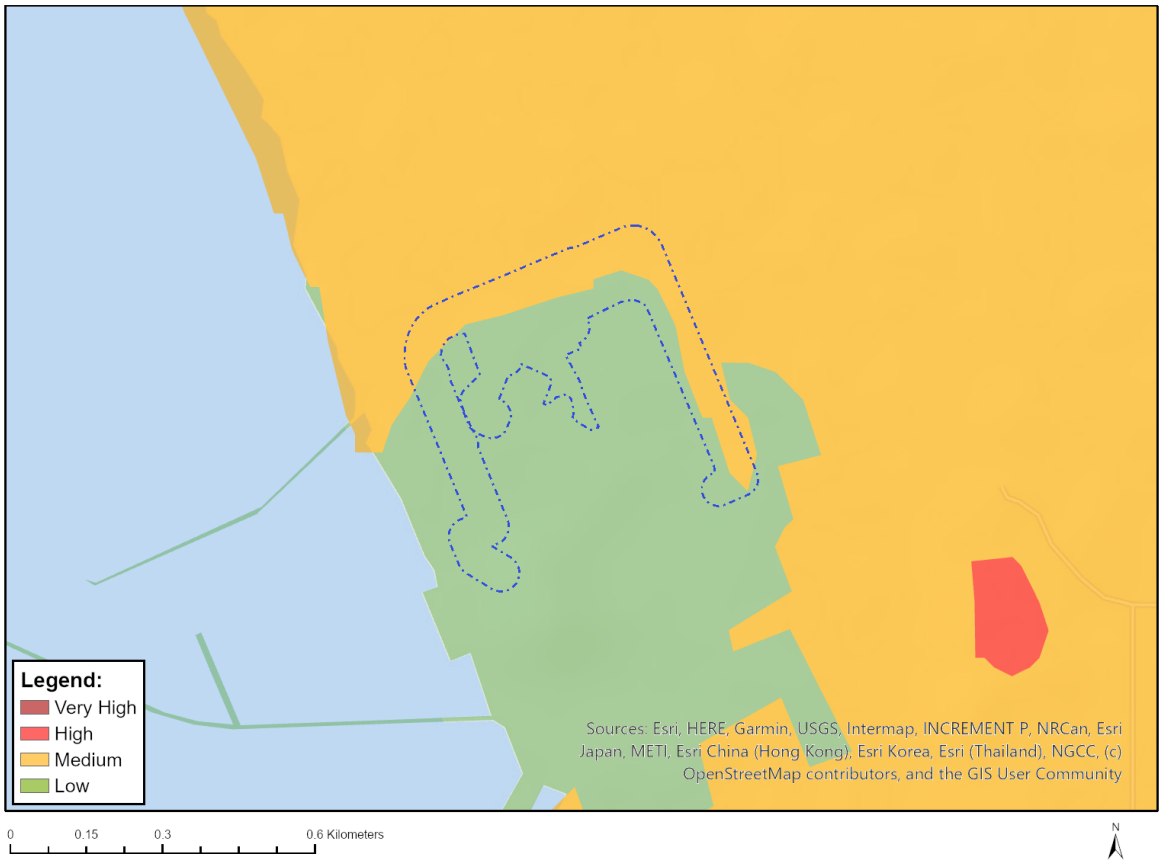
MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Lampranthus stenus
Medium	Lampranthus tenuifolius
Medium	Cleretum clavatum
Medium	Ruschia geminiflora
Medium	Lessertia argentea
Medium	Psoralea glaucina
Medium	Indigofera platypoda
Medium	Indigofera psoraloides
Medium	Lebeckia plukenetiana
Medium	Podalyria sericea
Medium	Thesium litoreum
Medium	Leucospermum hypophyllocarpodendron subsp. canaliculatum

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Medium	Leucospermum hypophyllocarpodendron subsp. hypophyllocarpodendron
Medium	Leucospermum tomentosum
Medium	Manulea corymbosa
Medium	Sensitive species 878
Medium	Sensitive species 816
Medium	Hermannia procumbens subsp. procumbens
Medium	Galenia crystallina var. maritima
Medium	Isolepis venustula
Medium	Cannomois arenicola
Medium	Elegia prominens
Medium	Cynanchum zeyheri
Medium	Sensitive species 985
Medium	Gnidia spicata
Medium	Metalasia capitata
Medium	Steirodiscus tagetes
Medium	Cotula duckittiae
Medium	Cotula eckloniana
Medium	Oncosiphon africanum
Medium	Agathosma corymbosa
Medium	Agathosma glabrata
Medium	Cliffortia ericifolia
Medium	Cliffortia hirta
Medium	Cliffortia longifolia
Medium	Limonium purpuratum
Medium	Muraltia macropetala
Medium	Muraltia mitior
Medium	Sensitive species 158
Medium	Phylica plumosa var. squarrosa
Medium	Argyrolobium velutinum
Medium	Xiphotheca reflexa
Medium	Sensitive species 599
Medium	Sensitive species 654
Medium	Lachnaea grandiflora
Medium	Cotula pusilla
Medium	Caesia sabulosa

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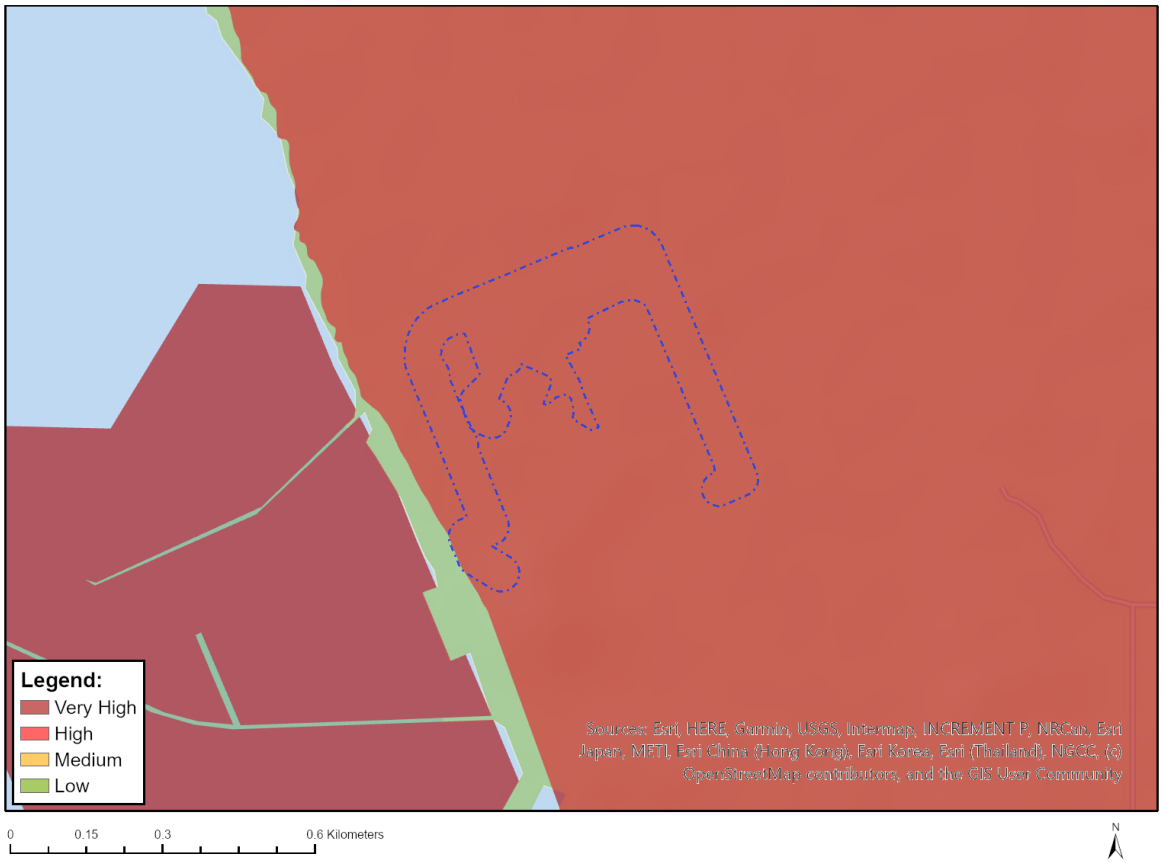
MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Koeberg Private Nature Reserve
Very High	EN_Cape Flats Dune Strandveld

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APPENDIX E - PROTOCOL FOR CHANCE FOSSIL FINDS

<table>
<tr><td></td><td></td></tr>
<tr><td>Responsible Heritage Resources Agency</td><td>HERITAGE WESTERN CAPE (Contact details: Protea Assurance Building, Green Market Square, Cape Town 8000. Private Bag X9067, Cape Town 8001. Tel: 086-142 142. Fax: 021-483 9842. Email: hwc@pgwc.gov.za)</td></tr>
<tr><td>ECO protocol</td><td>1. Once alerted to fossil occurrence(s): alert site foreman, stop work in area immediately (N.B. safety first!), safeguard site with security tape / fence / sandbags if necessary.</td></tr>
<tr><td colspan="2">2. Record key data while fossil remains are still in situ:
Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo
Context – describe position of fossils within stratigraphy (rock layering), depth below surface
Photograph fossil(s) in situ with scale, from different angles, including images showing context (e.g. rock layering)</td></tr>
<tr><td>3. If feasible to leave fossils in situ:
Alert Heritage Resources Agency and project palaeontologist (if any) who will advise on any necessary mitigation
Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Agency for work to resume</td><td>3. If not feasible to leave fossils in situ (emergency procedure only):
Carefully remove fossils, as far as possible still enclosed within the original sedimentary matrix (e.g. entire block of fossiliferous rock)
Photograph fossils against a plain, level background, with scale
Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags
Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist
Alert Heritage Resources Agency and project palaeontologist (if any) who will advise on any necessary mitigation</td></tr>
<tr><td colspan="2">4. If required by Heritage Resources Agency for the removal and processing of uncovered fossils, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.</td></tr>
</table>

APPENDIX F - EMPR REVIEW AND AMENDMENT REGISTER

EMPR REVIEW AND AMENDMENT REGISTER

Review Date	Description of Review and/or Amendment	Signature

APPENDIX G - ALIEN INVASIVE MANAGEMENT PROGRAMME

Invasive alien plants have a significant negative impact on the environment by causing direct habitat destruction, increasing the risk and intensity of wildfires, and reducing surface and sub-surface water. Landowners are under legal obligation to control alien plants occurring on their properties. Alien Invasive Plants require removal according to the Conservation of Agricultural Resources Act 43 of 1983 (CARA) and the National Environmental Management: Biodiversity Act (10 of 2004; NEMBA): Alien and Invasive Species Lists (GN R598 and GN R599 of 2014).

Category 1a and 1b listed invasive species must be controlled and eradicated. Category 2 plants may only be grown if a permit is obtained, and the property owner ensures that the invasive species do not spread beyond his or her property. The growing of Category 3 species is subject to various exemptions and prohibitions. Some invasive plants are categorised differently in different provinces. For example: the Spanish Broom plant is categorised as a category 1b (harmful) invasive plant in Eastern Cape and Western Cape, but it is a category 3 (less harmful) invasive plant in the other seven provinces.

Alien control programmes are long-term management projects and a clearing plan, which includes follow up actions for rehabilitation of the cleared area, is essential. This will save time, money and significant effort. Collective management and planning with neighbours allow for more cost-effective clearing and maintenance considering aliens seeds as easily dispersed across boundaries by wind or water courses. All clearing actions should be monitored and documented to keep track of which areas are due for follow-up clearing. Alien grasses are among the worst invaders in lowland ecosystems adjacent to farms but are often the most difficult to detect and control.

Several exotic invasive and other weed species were noted within the site, ranging from a few scattered individuals to dense infestations, in particular Black Wattle, Blackwood & Port Jackson Willow trees are common and abundant. The dense localised infestations of these tree species have a noticeable and definite impact to the habitat present and are a significant source of degradation. A weed management programme, as part of the construction contract including an after-care period will be required, until such time as natural vegetation has become adequately re-established. A two year after-care period is recommended.

Alien species recorded include *Ricinus communis* (castor-oil plant, category 2), *Prosopis glandulosa* (honey mesquite, 1b), *Schinus molle* (pepper tree), *Opuntia ficus-indica* (prickly pear, 1b), *Trichocereus cf spachianus* (torch cactus) and *Nicotiana glauca* (wild tobacco, 1b). As indicated above, four of these are Category 1b and 2 invaders. In terms of the National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004) Alien and Invasive Species List (2016), category 1b invasive species require compulsory control as part of an invasive species control programme. Also, the harbouring of category 2 species, such as *Ricinus communis*, is prohibited without a permit. The presence of these species is not problematic yet but requires attention to curb future problems.

Invasive alien and weed species within the demarcated working corridor must be removed in accordance with the regulations contained in the National Environmental Management: Biodiversity Act (NEM:BA, Act 10 of 2004), the Invasive Species Regulations (October 2014), the Conservation of Agricultural Resources Act (CARA, Act 43 of 1983) and the Duty of Care principle contained in NEMA, Section 28. Removal of species should take place throughout the construction, operational, and maintenance phases, in accordance with the following:

- In consultation with the ECO, the Contractor must control the establishment of alien invasive species along the working corridor on an ongoing basis during construction and follow-up clearance to be conducted for a 2-year period.
- The Contractor is responsible for the removal of alien species within all areas disturbed during construction activities. Disturbed areas include (but are not limited to) access roads, construction camps, site areas and temporary storage areas.
- In consultation with relevant authorities, the Engineer may order the removal of alien plants (when necessary) within the confines of the site are to be included.
- In consultation with the ECO, any alien vegetation (including brushwood and seed-bearing material) that is cleared must be disposed of at an appropriately registered waste disposal facility.
- Removal of alien vegetation are to be done according to the Working for Water Guidelines.
- The following control measures may be used to ensure that the introduction and spread of alien invasive vegetation is minimised:
- Seedlings and saplings can be removed through hand pulling and hoeing, treated with herbicide through a foliar spray or basal stem treatments.
- Mature trees can be felled, or ring barked or treated with herbicide by means of frilling or cut stump treatment.
- Herbicide should not be applied in wet or windy conditions.
- Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used;
- Footprint areas should be kept as small as possible when removing alien plant species; and
- After clearing is completed, an appropriate cover crop may be applied as provided in Rehabilitation Programme, should natural re-establishment of indigenous vegetation not take place in a timely manner.

APPENDIX H - REHABILITATION PROGRAMME

DRAFT REHABILITATION PROGRAMME

Rehabilitation Objective
The overall objective of the rehabilitation plan is to minimize adverse environmental impacts associated with the activity whilst maximizing the future utilization of the site. Significant aspects to be borne in mind in this regard is, revegetation of undeveloped footprint and stability and environmental risk. The depression and immediate area of the working area must also be free of alien vegetation. Additional broad rehabilitation strategies / objectives include the following:

- **Rehabilitating the worked-out areas to take place concurrently within prescribed framework established in the EMPr.**
- **All infrastructure, equipment, plant and other items used during the construction period will be removed from the site.**
- **Waste material of any description, including scrap, rubble and tyres, will be removed entirely from the site and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on site.**
- **Final rehabilitation shall be completed within a period specified by the DFFE and/or Cape Nature, if stipulated.**
- **Final landscaping and rehabilitation of the site must be done to the satisfaction of the ECO and must adhere to all conditions/ requirements of the Environmental Authorisation.**

Topsoil and Subsoil Replacement
Topsoil and subsoil will be stripped and stockpiled separately and only used in rehabilitation work towards the end of the operation. This is in contract to the gravel activity where rehabilitation and topsoil replacement was earmarked at the completion of each phase.

Stripped overburden will be backfilled into the worked-out areas where needed. Stripped topsoil will be spread over the re-profiled areas to an adequate depth to encourage plant regrowth. The vegetative cover will be stripped with the thin topsoil layer to provide organic matter to the relayed material and to ensure that the seed store contained in the topsoil is not diminished. Reseeding may be required should the stockpiles stand for too long and be considered barren from a seed bank point of view. Stockpiles should ideally be stored for no longer than a year.

The topsoil and overburden will be keyed into the reprofiled surfaces to ensure that they are not eroded or washed away. The topsoiled surface will be left fairly rough to enhance seedling establishment, reduce water runoff and increase infiltration.

Revegetation
All prepared surfaces will be seeded with suitable grass species to provide an initial ground cover and stabilize the soil surface. The following grass seed that is commonly available and suitable.

The overall revegetation plan will, therefore, be as follows:

- **Stabilise disturbed soil and rock faces.**
- **Minimize surface erosion and consequent siltation of natural water course located on site.**
- **Control wind-blown dust problems**
- **Enhance the physical properties of the soil.**
- **Re-establish nutrient cycling.**
- **Re-establish a stable ecological system.**

Every effort must be made to avoid unnecessary disturbance of the natural vegetation during operations.

Visual Impacts Amelioration
The overall visual impact of the proposed activities will be minimised by the following mitigating measures:

- **Confining the footprint to an area as small as possible**
- **Re-topsoiling and vegetating all disturbed areas.**

Monitoring and Reporting
Adequate management, maintenance and monitoring of rehabilitation success will be carried out annually for at least 2 years by the EA Holder to ensure successful rehabilitation of the property until a closure certificate is obtained.

To minimise adverse environmental impacts associated with operations it is intended to adopt a progressive rehabilitation programme, which will entail carrying out the proposed rehabilitation procedures concurrently with activity.

APPENDIX J: ENVIRONMENTAL AWARENESS BOOKLET

GEORGE
TEL: +27 (0) 44 873 4923 **FAX:** +27 (0) 44 874 5953
EMAIL: info@sescc.net **WEBSITE:** www.sescc.net
ADDRESS: Unit 17 Cathedral Square,
Cathedral Street, George, 6530
PO BOX: 9087, George, 6530

CAPE TOWN
TEL: +27 (0) 21 554 5195 **FAX:** +27 (0) 86 575 2869
EMAIL: betsy@sescc.net **WEBSITE:** www.sescc.net
ADDRESS: Tableview, Cape Town, 7441
PO BOX: 443, Milnerton, 7435

ENVIRONMENTAL AWARENESS TRAINING BOOKLET

Environmental Monitor's Forward

SES is here to ensure that everyone complies with the conditions of "Duty to Care". If these conditions are not complied with the project can be stopped and fines can be issued.

We hope that with your co-operation the project won't be stopped and fines won't be issued, and a successful project can be finished on time.

Notes:

- Workers working on this project must undergo environmental training.

- The information contained in this document should be used during day-to-day activities.

HOW IS THIS PROJECT IMPLEMENTING ENVIRONMENTAL MANAGEMENT?

This project is implementing Environmental Management on an ongoing basis throughout the duration of the project. The following aspects would be implemented to achieve the above stated:

- A dedicated Environmental Manager or Environmental Control Officer appointment to the project to implement and monitor Environmental Management.
- Regular environmental inspection on the site.
- Regular environmental training for workers
- Environmental audits on a regular basis.

WASTE TREATMENT

Refuse:

- Refuse waste includes: waste food, food containers, packaging materials, cans, bottles, newspapers and magazines.
- Day to day household waste should always be disposed of in the containers provided on site by the company.
- No dumping of waste anywhere other than in the bins provided.
- No burning of refuse.
- If there are not enough refuse containers on site, the ECO or supervisor needs to be informed.

Construction Waste:

- Construction waste includes: concrete, steel, cement, rock, pre-coated chips, wood, plastic, empty bags and rubble.
- Construction waste must be discarded in skips located in strategic areas for removal.
- Construction waste must not be discarded in holes or burned on site.

- Small amounts of construction waste should be collected and not discarded into vegetation or down fill slopes.
- Material should only be spoiled if a rehabilitation plan has been designed for the area.

Liquid waste:

- Liquid waste includes: concrete, paint, thinners, diesel, hydraulic fluids, cooking oil, chemicals, other fuel and sewage.
- Use facilities provided for waste.
- The liquid waste should be recycled as far as possible.
- Use chemical toilets and ablution facilities.

INFORM THE ENVIRONMENTAL CONTROL OFFICER (ECO) IMMEDIATELY OF ANY IMMEDIATE OR POTENTIAL ENVIRONMENTAL INCIDENT.

SPECIFIC ENVIRONMENTAL ISSUES

SPESIFIEKE OMGEWINGSKWESSIES
IMIBA ETHILE YEZOBUME BEMEKO YENDALO

The basic Do's and Don'ts towards environmental awareness are as follows:

Die basiese Moets en Moenies van omgewingsbesinning is as volg:

Oondoqo bo mawukwenze no mawungakwenzi kwilinge lezobume be meko yendalo bume ngoluhlobo:

Toilet Facilities:
Toilet Fasiliteite:
Izindlu Zangasese:

DO:

USE THE TOILET FACILITIES PROVIDED - REPORT FULL FACILITIES
MOET:
GEBRUIK MAAK VAN TOILET FASILITEITE WAT VOORSIEN WORD – RAPPORTEER AS FASILITEITE VOL IS
OMAWUKWENZE: SEBENZISA IZINDLU ZANGASESE EZIBONELELWEYO- NIKA INGXELO NGAMALUNGISELELO AGCWELEYO.

DO NOT:
USE THE BUSH
MOENIE:
DIE BOS GEBRUIK NIE
OMAWUNGAKWENZI: UKUSEBENZISA ITYHOLO.

Vehicles operation and maintenance:
Voertuig werking en onderhoud:
Ulawulo nophatho lezithuthi:

DO:
ENSURE THAT VEHICLES AND MACHINERY DO NOT LEAK FUEL OR OILS. REFUELLING, MAINTENANCE, SERVICING OR WASHING MUST BE DONE WITHIN THE DESIGNATED AREA IN THE CONSTRUCTION CAMP AREA ONLY.
MOET:
VERSEKER DAT VOERTUIE EN MASJINERIE NIE OLIES OF BRANDSTOF LEK NIE. VOLMAAK, ONDERHOUD, DIENS OF SKOONMAAK VAN VOERTUIE MOET SLEGS IN AANGEWYSTE AREAS IN DIE KONSTRUKSIE KAMP GESKIED.
OMAWUKWENZE: QINISEKISA IZITHUTHI NOMATSHINI ABAVUZI MAFUTHA OKANYE I OYILE, UKUGALELA, UKUPHATHA, UKULUNGISA OKANYE UKUHLAMBA KUFUNEKA KWENZIWE KUMMANDLA OTYUNJIWEYO KWINKAMPI YOLWAKHIWO KUPHELA NGOKUKHAWULEZILEYO.

DO:
REPORT ALL FUEL OR OIL SPILLS IMMEDIATELY & STOP THE SPILL CONTINUING.
MOET:
RAPPORTEER ENIGE BRANDSTOF OF OLIE STORTE & VERHOED DAT DIE STORT AANHOU.
OMAWUKWENZE: NIKA INGXELO NGE OLI NAMAFUTHA ACHITHEKILEYO, UZE UNQANDE UCHITHEKO LUNGAQHUBEKI.

DO:
PREVENT CONTAMINATION OR POLLUTION OF STREAMS AND WATER CHANNELS.
MOET:
VERHOED DIE KONTAMINASIE EN BESOEDELING VAN STROME & WATERKANALE.
OMAWUKWENZE : NQANDA USULELEKO OKANYE UNGCOLISEKO LWEMILAMBO NEMISELE YAMANZI.

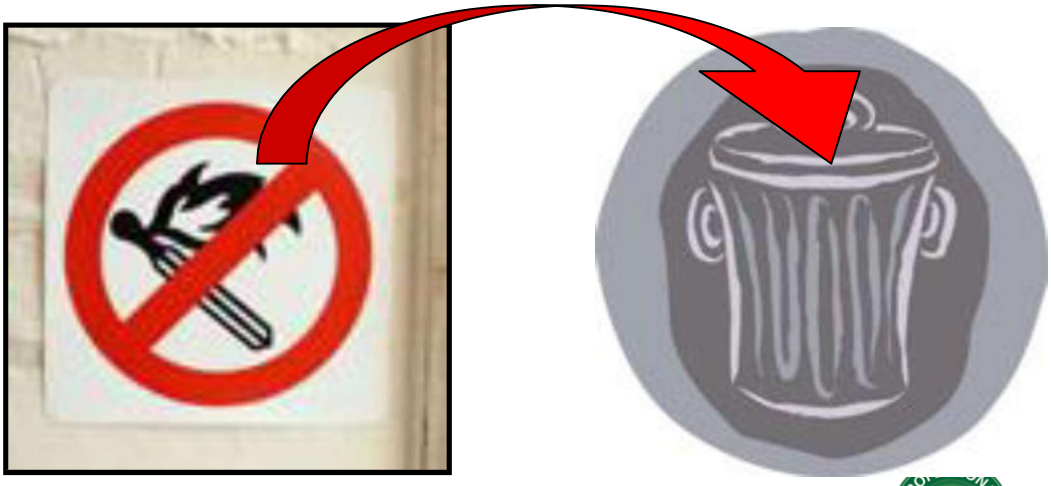
DO NOT:
ALLOW WASTE, LITTER, OILS OR FOREIGN MATERIALS INTO THE STREAM
MOENIE:
TOELAAT DAT AFVALPRODUKTE, GEMORS, OLIES OF VREEMDE MATERIALE IN STROME BELAND NIE.
OMAWUNGAKWENZI: MUSA UKUVUMELA INCITHO, ULAHLO, IOYILE OKANYE EZINYE IZINTO EMILANJENI.

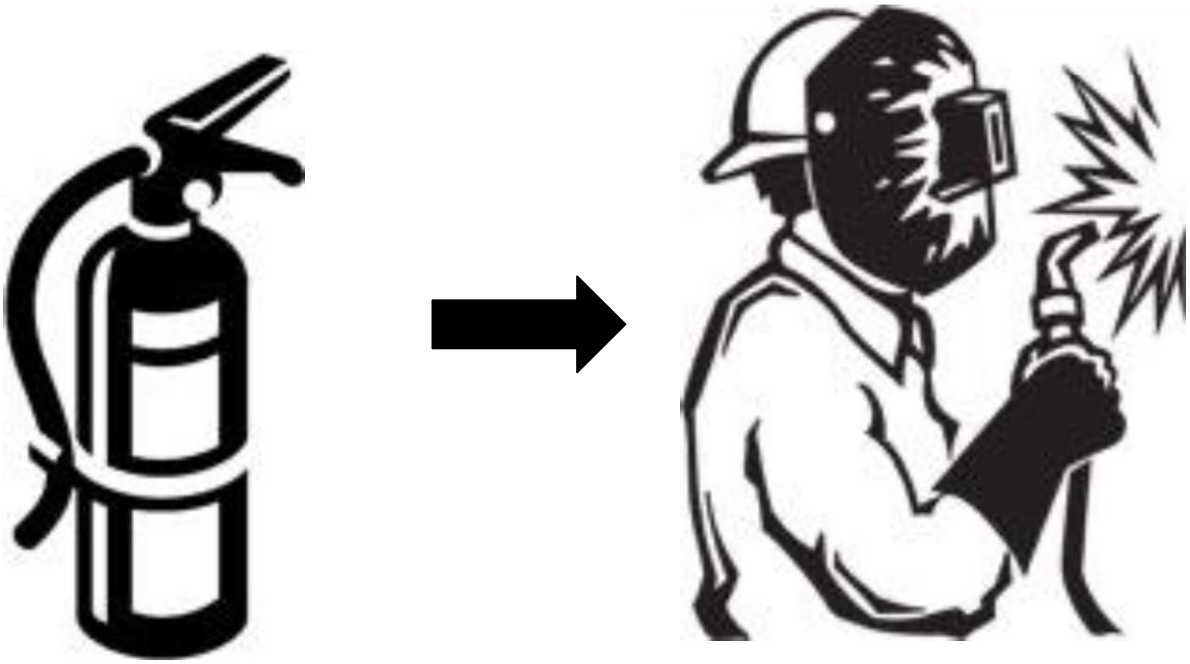
Fire Control:
Vuur Beheer:
Ulawulo Lemililo:

DO:
DISPOSE OF CIGARETTES AND MATCHES CAREFULLY. (Littering is an offence.)
MOET:
GOOI SIGARETTE & VUURHOUTJIES OP GEPASTE MANIER WEG WEG (rommelstrooi is 'n oortreding)
OMAWUKWENZE: LAHLA ISIGARETE NOOMATSHISI NGONONOPHELO (ukulahla lityala).

DO:
ENSURE A WORKING FIRE EXTINGUISHER IS IMMEDIATELY AT HAND IF ANY "HOT WORK" IS UNDERTAKEN e.g. welding, grinding, gas cutting etc.
MOET:
VERSEKER DAT 'N WERKENDE BRANDBLUSSER BYDERHAND IS INDIEN "WARM WERK" GEDOEN WORD bv. Sweiswerk.
OMAWUKWENZE: QINISEKISA ISICIMA-MLILO ESISEBENZAYO SISESANDLENI UKUBA KUKHO UMSEBENZI "OTSHISAYO" OWENZIWAYO, umz. ukuwelda, ugubo, ukuqhawula ugesi, njl.

DO NOT:
MAKE ANY FIRES
MOENIE:
ENIGE VURE MAAK OF ENIGEIETS VERBRAND NIE
OMAWUNGAKWENZI: UKWENZA IMILILO OKANYE UTSHISE NOKUBA YINTONI.





Fencing and Restricted Areas:
Omheining en Beperkte Areas:
Ubiyelo Nemimanndla Engavumelekanga:

DO:

CONFINE WORK AND STORAGE OF EQUIPMENT TO WITHIN THE IMMEDIATE WORK AREA.
MOET:
BEPERK ALLE WERK EN STOOR VAN GEREEDSKAP TOT IN DIE GEGEWE WERKAREA.
OMAWUKWENZE:GCINA UMSEBENZI NEZIXHOBO ZOKUSEBENZA NGAKUMMANDLA OKUSETYENZELWA KUWO.

DO NOT:
ENTER ANY FENCED OFF OR MARKED AREA. SUCH AREAS HAVE BEEN MARKED WITH "NO-GO AREA" SIGNS AND SHOULD BE ADHERED TO.
MOENIE:
ENIGE OMHEINDE OF GEMERKTE AREAS BINNEGAAN NIE. SULKE AREAS IS MET "NO-GO AREA" TEKENS GEMERK EN MOET GEHOORSAAM WORD.
OMAWUNGAKWENZI: MUSA UKUNGENA KWI NDAWO EBIYIWEYO OKANYE EPHAWULWEYO. IMIMANDLA ENJALO IPHAWULWE NGAMAGAMA ATHI "**NO-GO AREA** "

NO-GO AREA

Safety:
Veiligheid:
Ukhuseleko:

DO:
USE ALL SAFETY EQUIPMENT AND COMPLY WITH ALL SAFETY PROCEDURES.
MOET:
GEBRUIK ALLE VEILIGHEIDSGEREEDSKAP EN VOLDOEN AAN ALLE VEILIGHEIDS PROSEDURES.
OMAWUKWENZE: SEBENZISA ZONKE IZIXHOBO ZOKHUSELEKO, UZE UTHOBELE YONKE IMIGAQO YOKHUSELO.

Driving and Dust:
Bestuur en Stof:
Uqhubo Nothuli:

DO:
DRIVE ON DESIGNATED ROUTES ONLY.
MOET:
NET OP AANGEWYSTE ROETES BESTUUR.
OMAWUKWENZE: QHUBA KWIMIMANDLA EPHAWULWEYO KUPHELA.

DO NOT:
SPEED OR DRIVE RECKLESSLY
MOENIE:
JAAG OF ROEKELOOS BESTUUR NIE.
OMAWUNGAKWENZI: SUKUQHUBA NGESANTYA ESIPHEZULU OKANYE NGOKUNGAKHATHALI.

DO NOT:
ALLOW CEMENT TO BLOW AROUND.
MOENIE;
TOELAAT DAT SEMENT WEGWAAI NIE.
OMAWUNGAKWENZI: MUSUKUVUMELA ISAMENTE ISASAZWE.

DO NOT:
CAUSE EXCESSIVE DUST
MOENIE:
OORDREWE STOF VEROORSAAK NIE.


SLOW


PPC

Vegetation protection:
Plantegroei Beskerming:
Ukhuselo Lwezityalo:

DO NOT:
DAMAGE OR REMOVE ANY VEGETATION WITHOUT DIRECT INSTRUCTION.
MOENIE:
ENIGE PLANTEGROEI SONDER DIREKTE INSTRUKSIE BESKADIG OF VERWYDER NIE.
OMAWUNGAKWENZI: MUSA UKUTSHABALALISA OKANYE USUSE NASIPHINA ISITYALO NGAPHANDLE KOMYALELO.

Animals:
Diere:
Izilwanyana:

DO NOT:
INJURE, CAPTURE/SNARE, FEED OR CHASE ANIMALS – this includes birds, frogs, snakes, lizards, tortoises, etc.
MOENIE:
ENIGE DIERE BESEER, VANG, VOER OF JAAG NIE – dit sluit in: voëls, paddas, slange akkedisse, skilpaaie ens.
OMAWUNGAKWENZI: MUSA UKWENZAKALISA, UKUBAMBA, UKONDLA OKANYE UKULEQA IZILWANYANA- okuquka iintaka, amasele, iinyoka, amacilikishe, izikolopati.

DO:
REPORT ANY INJURY OF AN ANIMAL.
MOET:
DIE BESERING VAN 'N DIER RAPPORTEER.
OMAWUKWENZE: XELA NASIPHI ISENZAKALO SESILWANYANA.

Preventing Pollution:
Voorkoming van Besoedeling:
Ukhuselo Longcoliseko:

DO:
CLEAR YOUR WORK AREAS OF LITTER AND BUILDING RUBBLE AT THE END OF EACH DAY – use the waste bins provided and ensure that litter will not blow away.
MOET:
RUIM NA ELKE DAG DIE WERK AREA OP EN GOOI ENIGE ROMMEL WEG IN DIE GEGEWE HOUERS – maak seker dat rommel nie kan wegwaai nie.
OMAWUKWENZE: COCA INDAWO OSEBENZA KUYO, IZINTO EZILAHLIWEYO NENKUNKUMA YOKWAKHA QHO EKUPHELENI KWEMINI-sebenzisa imigqomo yenkunkuma uze uqiniseke ukuba inkunkuma ayivuthuzwa ngumoya.

DO NOT:
ALLOW WASTE BINS TO OVERFLOW OR WASTE TO BLOWAROUND.
MOENIE:
TOELAAT DAT ROMMELHOUERS OORVLOEI OF DAT ROMMEL ROND WAAI NIE.
OMAWUNGAKWENZI: MUSA UKUVUMELA IMIGQOMO YENKUNKUMA IGCWALE KAKHULU OKANYE INKUNKUMA ISASAZEKE.

DO NOT:
LITTER OR LEAVE FOOD LAYING AROUND
MOENIE:
ROMMEL OF KOS LAAT RONDLÊ NIE.
OMAWUNGAKWENZI: MUSA UKUNGCOLISA OKANYE USHIYE UKUTYA KULELE INDAWO YONKE.

DO NOT:
BURY ANY LITTER OR WASTE IN THE GROUND.
MOENIE:
ENIGE ROMMEL OF GEMORS IN DIE GROND BEGRAWE NIE.
OMAWUNGAKWENZI: MUSA UKUNGCWABA INKUNKUMA EMHLABENI.


GLASS
CARDBOARD
PAPER