ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

INDUSTRIAL PARK (WAREHOUSING AND OFFICES)

ERF 10301, WELLS ESTATE, GQEBERHA

EASTERN CAPE

DECEMBER 2025

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EXPERTISE: PAUL SLABBERT (Managing Member) graduated from the Potchefstroom University in 1995 with an honours degree B Art Et Scien. His passion for environmental, heritage & land-use planning with knowledge of associated management strategies enables him to facilitate all role players and to implement workable policies. His experience in rural and urban conservation with the emphasis on environmental impact and management, focusing on sustainable development, enabled him to have various publications. He has hands-on expertise in heritage, conservation and recreation discipline with the emphasis on creating economic and employment opportunities. With sufficient practical experience in terms of the criteria of the Interim Certificate Board for Environmental Assessment Practitioners of South Africa (EAPASA) for registration, Paul was registered as an Environmental Assessment Practitioner. He is also a member of the International Association for Impact Assessment (IAIA), Corporate Member of the South African Planning Institute (SAPI) and accredited with the Association of Professional Heritage Practitioners (APHP).

EXPERTISE: JENNA THERON (Senior EAP) graduated from Stellenbosch University with a Bachelor's Degree in International Studies (2005) and a Master's Degree in Cultural Tourism and Heritage Studies (2007). Jenna has experience in the field of environmental and heritage planning since interning for the CoCT's Environmental and Heritage Department in 2008 and thereafter working as an Environmental Assessment Practitioner since 2009 to the present. With sufficient practical experience in terms of the criteria of the Interim Certificate Board for Environmental Assessment Practitioners of South Africa (EAPASA) for registration, Jenna was registered as an Environmental Assessment Practitioner. She is also a member of the International Association for Impact Assessment (IAIA) and an accredited Associate member with the Association of Professional Heritage Practitioners – Western Cape (APHP).

PAUL SLABBERT

EAPASA Reg 2019-1036 (Registered EAP)

JENNA THERON

EAPASA Reg 2022-5926 (Registered EAP)

Please refer to our CVs included in **Annexure 1**.

CONTENTS

ANNEXURES

DEFINITIONS OF TERMS AND ACRONYMS

Activity means an activity identified in any notice published by the Minister or MEC in terms of section 24D(1)(a) of the Act as a listed activity or specified activity. Activity in this document refers to the activities as listed in Listing Notice 1, 2 and 3 of the Environmental Impact Assessment Regulations, 2014 (as amended).

Applicant means the person or legal entity that has made application to the competent authority for environmental authorizations and who will have the overall responsibility to adhere to the relevant legislation and comply with the environmental authorization.

AIP Alien Invasive Plant

BAR Basic Assessment report

CBA Critical Biodiversity Area

CEBA Critical Ecological Biodiversity Area

CFR Cape Floristic Region

Contractor

(i) the main or specialised contractors as engaged by the Applicant for the execution of the works, including all sub-contractors appointed by the main contractor of his own volition for the execution of parts of the works.

(ii) any other contractor from time to time engaged by the Applicant directly in connection with any part of the works which is not a nominated subcontractor or a subcontractor to the main contractor.

DEDEAT The Department / Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape Province)

EA Environmental Authorisation

EAP Environmental Assessment Practitioner

ECPHRA Eastern Cape Provincial Heritage Authority

Environmental Control Officer (ECO) a suitably qualified individual or site manager to be appointed by the Applicant, and his successor/s should he cease to hold such appointment for any reason, to oversee the implementation of the EMPr and environmental agreement until the completion of works on the site.

EMPr Environmental Management Programme

GA General Authorisation, in terms of the National Water Act, 1998 (Act No. 36 of 1998)

GN Government Notice

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

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

MEC Member of Executive Council

NEMA National Environmental Management Act, 1998 (Act No. 107 of 1998)

NEMBA National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

NFEPA National Freshwater Ecosystems Priority Areas

NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)

NVFFA National Veld and Forest Fire Act, 1998 Act No. 101 of 1998

NWA National Water Act, 1998 (Act No. 36 of 1998)

OEMP Operational Environmental Management Programme

Owner means the landowner.

Resident Engineer (RE) the representative Engineer or specialist from the department of Agriculture present on site for that part of the works.

SCC Species of Conservation Concern

Site Manager the employee of the main contractor or Applicant responsible for the day-to-day control of all activities and operation on site.

Watercourse means:

(a) a river or spring;

(b) a natural channel in which water flows regularly or intermittently;

(c) a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and a reference to a watercourse includes, where relevant, its bed and banks.

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

Works the construction operations, all related and incidental works such as, but not limited to, site works, fencing, earthworks, roads, and ploughing of the authorised area.

1. CONTEXTUAL INFORMATION

1.1. Background

PHS Consulting has been appointed by Equities Property Fund Limited to undertake the application for Environmental Authorisation (Basic Assessment) for the proposed construction of a new Industrial Park (warehousing and offices) situated on Erf 10301, Wells Estate, Gqeberha, Eastern Cape Province. The property is bounded by the R102 (the Old Grahamstown Road) to the east and M Kaulela Street to the north with the R367 located to the west and Tynira Street to the south [**Annexure 2: Locality Map**]. Erf 10301 is owned by Retail Logistics Fund (Pty) Ltd (Reg. Nr. 2019/595444/07) and is ±16.65 ha in extent. The site is zoned Industrial 1.

An Environmental Management Programme (EMPr) describes mitigation measures in detail, and is prescriptive, identifying specific individuals or organisations responsible for undertaking specific tasks to ensure that impacts on the environment are minimised during construction, operational and related activities. Information gained during on-going monitoring of procedures on site could lead to changes in the recommendations and specifications of this document over time. As an open – ended document, information gained during on-going monitoring of procedures on site could lead to changes in the recommendations and specifications of this document. This document forms an agreement between the Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape Province) (DEDEAT) and the Applicant that the environmentally sensitive features on the site will be suitably protected during the lifespan of the activity through the implementation of the applicable mitigation measures.

This document is intended to guide and manage construction and operational activities associated with the proposed Industrial Park (warehousing and offices) situated on Erf 10301, Wells Estate, Gqeberha, Eastern Cape Province.

1.2. Activity Description

The primary land-use of the development will be warehousing with ancillary offices. Six zones within the property will be established made up of a combination of warehousing/ offices and these will be surrounded by roads, parking, service infrastructure, and open spaces. The total development footprint is ± 161 101 m^2.

Access to the site will be from M Kaulela Street. The internal distribution road will be 11m wide from kerb to kerb consisting of two 4m wide lanes and two 1.5m wide yellow shoulders, with paved walkways on both sides. The main entrance off M Kaulela Street will be four lanes through a security checkpoint. The guardhouse will be set back from the street to allow for stacking of trucks.

Stormwater run-off will be concentrated to low points in the parking areas and marshalling yards, from where the minor portion of runoff will be conveyed via a conventional underground system. The internal roads, marshalling yards, parking areas and channels will act as overland flow routes for major storm events. A new stormwater connection from the existing stormwater canal to the south of the property (crossing the R102 to the site) will be constructed. The pipe route is across municipal land, and it is recommended that the culvert be laid within an 8m wide servitude.

Two stormwater attenuation facilities/dams will be constructed on the southwestern and south-eastern boundaries, respectively. The attenuation dams will act as dry detention basins, with a combined extended storage available to effectively attenuate up to a 1: 50-year post development flood, to 1:5-year pre-development flood levels. These facilities will effectively manage and convey stormwater run-off of up to 1:100-year rainfall events to minimize the risk of flooding of internal and downstream properties. A minimum

combined storage volume of 2038m3 is required. The attenuation dam outlets will be connected to the existing stormwater channel to the south-east of the site, via the new proposed culvert.

Due to the flatness of the area, each of the six zones will have its own sewer collection sump and pump station lifting the sewer and discharging into the existing main sewer pump station. The internal sewer network for the individual sites will consist of a 160mm diameter uPVC Class 34 pipe network and round precast fibre cement manholes.

The proposed internal water reticulation network will consist of a 160mm diameter metered connection splitting into two separate lines: a 160mm diameter uPVC Class 16 for fire and a 110mm diameter uPVC Class 12 for potable water."

A 25kVA supply has been allocated to the site by the Nelson Mandela Bay Municipality (NMBM). The proposed Industrial Park is anticipated to have a load requirement of approximately 2.5 MVA. Incorporating a solar PV system is a key step toward advancing renewable energy and long-term sustainability for this development. With substantial roof space available, the initiative aims to deliver up to 1 MVA of clean energy, reducing reliance on traditional power sources and improving energy resilience.

Please refer to Figure 1 (**Appendix C)** for the proposed **Site Development Plan**.

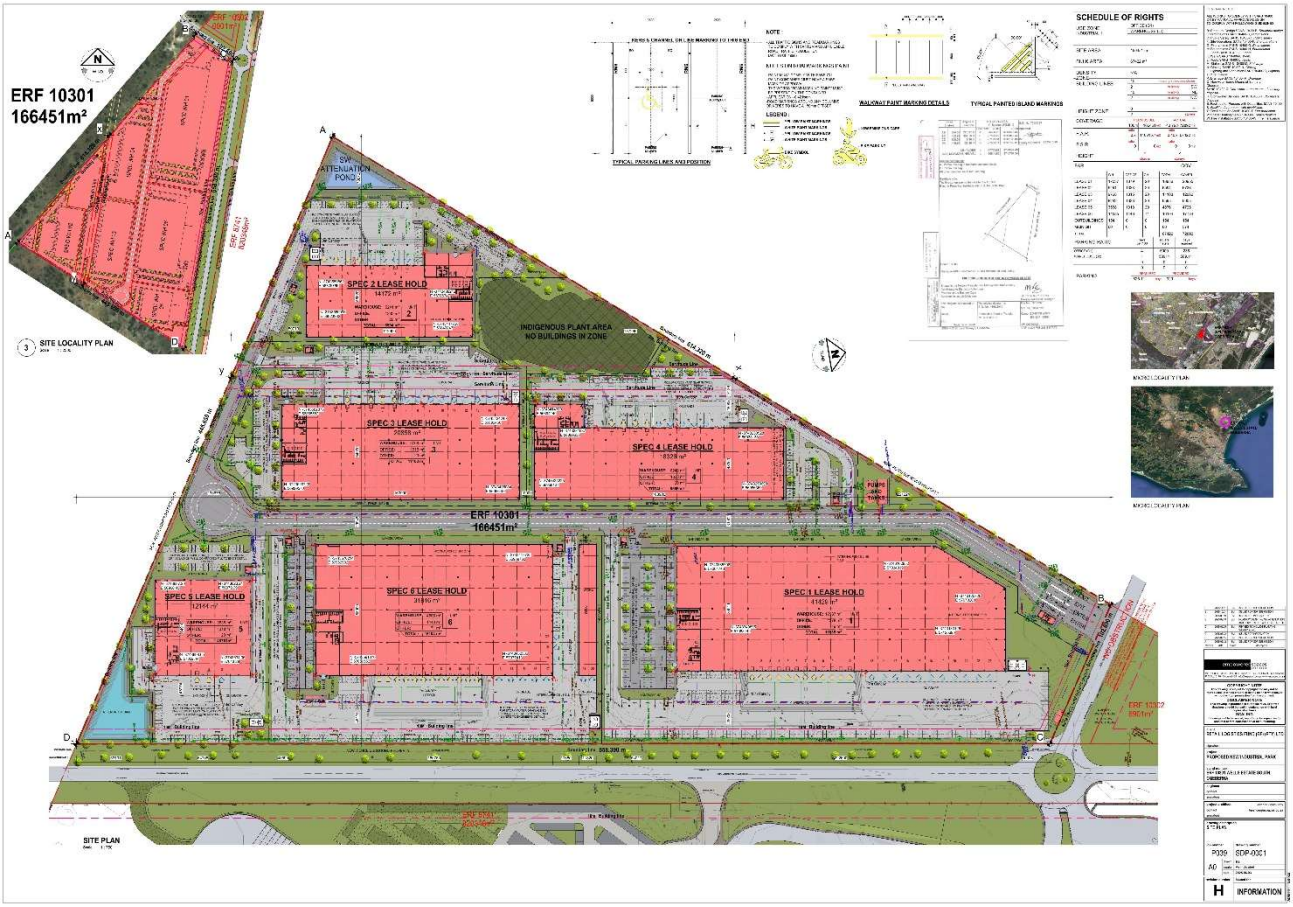

Figure 1: *Proposed Site Development Plan.*

1.3. Environmental Attributes

Vegetation:

Grassridge Bontveld vegetation, restricted to the karst landscape created in the underlying limestone, consists of scattered, low bushclumps of Thicket species, in a matrix of open grassland which contains species characteristic of Fynbos, Grassland and Succulent Karoo vegetation types. Bushclumps are dominated by *Aloe africana*, *Chrysanthemoides monilifera, Colpoon compressum*, *Euclea undulata*, *Pterocelastrus tricuspidatus* and *Sideroxylon inerme*. The grassy matrix in Grassridge Bontveld is dominated by *Cynodon dactylon*, *Eustachys paspaloides*, *Themeda triandra*, *Ficinia truncata*, *Acmadenia obtusata*, *Disparago ericoides*, *Euryops ericifolius*, *Gazania krebsiana*, *Gibbaria scabra*, *Jamesbrittenia microphylla*, *Lobostemon trigonus*, *Monsonia emarginata*, *Nylandtia spinosa*, *Osteospermum imbricatum* and *Pteronia incana*. These grassy / fynbos areas also included high number of the small Euphorbia species (*E. globosa, & E.* obesa), *Pachypodium bispinosum* and *P. succulentum* and *Fockea gracilis* plants all of which are protected.

The proposed site is located within this vegetation type and thus all of these species listed above were observed with small, isolated areas, with only one small clump (thicket / grassland mosaic) remaining (4% of the site). The remainder of the site (96%), is heavily grazed by goats and cattle, used for illegal dumping of covered by alien *Acacia cyclops, Acacia longifolia, Acacia saligna, Lantana camara and Opuntia ficus-indica.*

From a conservation perspective the vegetation type/habitat listed in the NMBM Bioregional Plan is considered 'Vulnerable'. It should be noted that this bioregional plan was promulgated under the National Environmental Management: Biodiversity Act (10/2004): Publishing of the Final Bioregional Plan for the NMBM, March 2014 GN No. 3362. On 18 November 2022 a revised list of threatened ecosystems in need of protection was published in terms of the National Environmental Management, Biodiversity Act (NEMBA), (Act No 10 of 2004) (based on vegetation types in the Vegmap, 2006, as amended). Should a vegetation type or ecosystem be listed, actions in terms of NEM:BA are triggered. None of those ecosystems observed within the study area are listed in terms of this Act, i.e. the remaining extent of the observed Grassridge Bontveld is listed as Least Concern. Refer to Figure 2 showing the 'no-go' area and the remaining area.

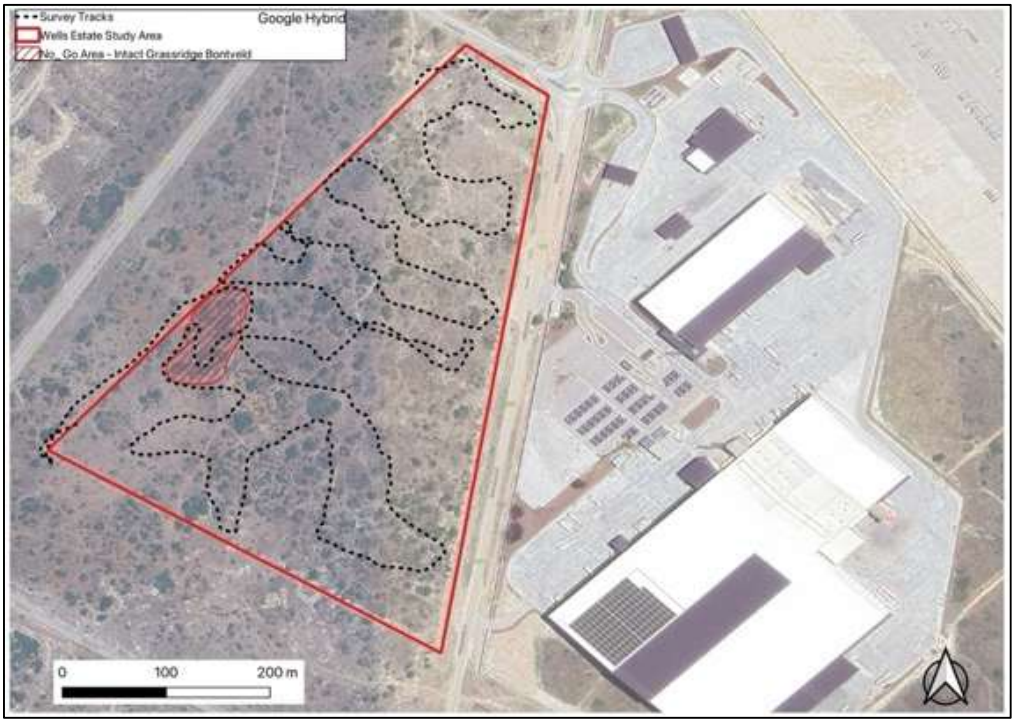

Figure 2: *The results of the ecological sensitivity assessment, with the No-Go area shown (red hatched area). Note this is an older image for the site, and areas that were similar to this Bontveld area have been cleared.*

Several important plant species are known to occur within the region as these are listed by SANBI under the Threatened Species Programme using the International Union for Conservation of Nature or IUCN (Red data list) criteria. These are shown in Table 1 below and any such plant Species of Special Concern were actively searched for during the survey. The highest density of the listed species are always found within the Grassridge Bontveld areas, and in particular along the edges of the bush clumps.

Table 1: *Protected plant species observed in the study area under the SANBI Threatened Species Programme and Provincial Nature Conservation Ordinance.*

Family	Species	Threat status (SANBI IUCN)	Protected status (PNCO 1974, NFA 1998)	Life form
AMARYLLIDACEAE	*Boophone disticha* (L.f.) Herb.	Declining	Protected	Geophyte
AMARYLLIDACEAE	*Haemanthus coccineus* L.	LC	Protected	Geophyte
APOCYNACEAE	*Pachypodium bispinosum* (L.f.) A.DC.	LC	Protected	Succulent
ASPHODELACEAE	*Aloe africana* Mill.	LC	Protected	Succulent
ASTERACEAE	*Euryops ericifolius* (Bél.) B.Nord.	EN		Dwarf shrub
CRASSULACEAE	*Crassula perfoliata* L. var. *coccinea* (Sweet) G.D.Rowley	LC	Protected	Succulent
CRASSULACEAE	*Crassula perfoliata* L. var. *minor* (Haw.) G.D.Rowley	LC	Protected	Succulent
EUPHORBIACEAE	*Euphorbia procumbens* Mill.	LC	Protected	Succulent
EUPHORBIACEAE	*Euphorbia globosa*.	LC	Protected	Succulent
EUPHORBIACEAE	*Euphorbia ledienii* A.Berger var. *ledienii*	LC	Protected	Succulent
EUPHORBIACEAE	*Euphorbia meloformis* Aiton subsp. *meloformis*	NT	Protected	Succulent
FABACEAE	*Indigofera tomentosa* Eckl. & Zeyh.	NT		Herb
GERANIACEAE	*Pelargonium reniforme* Curtis subsp. *reniforme*	DDD		Dwarf shrub, geophyte
IRIDACEAE	*Babiana sambucina* (Jacq.) Ker Gawl. subsp. *sambucina*	LC	Protected	Geophyte
IRIDACEAE	*Freesia corymbosa* (Burm.f.) N.E.Br.	LC	Protected	Geophyte
IRIDACEAE	*Tritonia gladiolaris* (Lam.) Goldblatt & J.C.Manning	LC	Protected	Geophyte
AIZOACEAE	*Aptenia haeckeliana* (A.Berger) Bittrich ex Gerbaulet	LC	Protected	Succulent
AIZOACEAE	*Delosperma echinatum* (Lam.) Schwantes	LC	Protected	Succulent
AIZOACEAE	*Glottiphyllum longum* (Haw.) N.E.Br.	LC	Protected	Succulent
AIZOACEAE	*Rhombophyllum rhomboideum* (Salm-Dyck) Schwantes	EN	Protected	Succulent
AIZOACEAE	*Ruschia cymbifolia* (Haw.) L.Bolus	LC	Protected	Succulent
ORCHIDACEAE	*Acrolophia capensis* (P.J.Bergius) Fourc.	LC	Protected	Geophyte
RUTACEAE	*Agathosma stenopetala* (Steud.) Steud.	VU		Dwarf shrub
SAPOTACEAE	*Sideroxylon inerme* L. subsp. *inerme*	LC	Protected (NFA)	Tree

Several plant species are also listed in the Provincial Nature Conservation Ordinance (PNCO) of 1974, the National Forest Act (Act No. 84 of 1998). These species of special concern will require permits from the relevant provincial departments if any individuals are to be removed, translocated or trimmed according to the relevant legislation including the National Forestry Act (No. 84 of 1998) (Department of Forestry, Fisheries and the Environment) and the Provincial Nature Conservation Ordinance (Eastern Cape Department of Economic Development, Environmental Affairs and Tourism – Permit Administration).

Aquatic:

No rivers or connected watercourses are anticipated within the study area, i.e. no concentrated surface flows are linked directly to any mainstem rivers within the greater region. Thus, the site is dominated by a coastal bench / plateaus which is underlain by calcrete formations of the Algoa Group (Alexandria Formation), within the M30B

quaternary catchment of the Coega River. Two canals are located between 200 and 500m from the site, and these drain the Motherwell area of stormwater into the Swartkops Estuary.

The proposed site is not located within any Wetland Cluster as shown in the NSBA (2018) spatial information. These are areas with a high density of wetlands such as Valley Bottom systems. The proposed site is located within the Coega Table Mountain Sandstone Groundwater Strategic Water Resource Area. A Strategic Water Source Area (SWSA) is one where the water that is supplied is of national importance for water security. Surface water SWSAs are found in areas with high rainfall and produce most of the runoff. Groundwater SWSAs have high groundwater recharge and are located where the groundwater forms a nationally important resource. There are 22 national-level SWSAs for surface water (SWSA-sw) and 37 for groundwater (SWSA-gw). The SWSA-gw cover 9% of the area of South Africa, account for 15% of the recharge, 46% of the groundwater used by agriculture and 47% of the groundwater used by industry.

Furthermore, one wetland was indicated within 500m of the proposed site, namely an Endorheic Pan / Depression. The wetland is not located on the site – refer to Figure 3 below.

Figure 3: *Wetlands delineated in this study area within 500m of proposed project footprint.*

Fauna:

Table 2 lists the relevant faunal groups, their likelihood of occurring within the study area, together with their associated habitat and conservation status. The majority of species listed as well as observed with a conservation status were found in association with the rocky outcrops or the Bontveld areas. Most of the species that are likely to occur were observed during the Search and Rescue programme during the construction of the adjacent Checkers Distribution Centre (DC) site. Although the DC site was less degraded than the study area, with more available habitat, species may still occur.

The majority of these species were listed by the PNCO, while the species listed by the DFFE Screening Tool were all rated as of Medium Sensitivity. DFFE also listed several bird species however these are all birds of prey and will move from the site should they occur.

Table 2: *List of species recorded or likely to occur in the general study area, together with the conservation status. Key =: Y = Observed; U = Unconfirmed, but within the distribution range; 2022 = observed.*

Taxon	Common Name	RDB/SSC	Presence
Amphibians			
Amietophrynus pardalis	Eastern Leopard Toad	PNCO, IUCN LC	U
Amietophrynus rangeri	Raucous Toad	PNCO, IUCN LC	U
Breviceps adspersus pentheri	Penther's Rain Frog	PNCO, IUCN LC	U
Cacosternum boettgeri	Common caco	PNCO, IUCN LC	U
Cacosternum nanum	Bronze Caco	PNCO, IUCN LC	U
Hyperolius marmoratus	Painted Reed Frog	PNCO, IUCN LC	U
Kassina senegalensis	Bubbling Kassina	PNCO, IUCN LC	U
Semnodactylus wealii	Rattling Frog	PNCO, IUCN LC	U
Strongylopus fasciatus	Striped Stream Frog	PNCO, IUCN LC	U
Strongylopus grayii	Clicking Stream Frog	PNCO, IUCN LC	U
Tomopterna delalandii	Cape Sand Frog	PNCO, IUCN LC	U
Vandijkophrynus angusticeps	Cape sand Toad	PNCO, IUCN LC	U
Xenopus laevis	Common Platanna	PNCO, IUCN LC	U
Reptiles			
Acontias gracilicauda	Thin tailed legless skink	PNCO, IUCN LC	U
Acontias lineicauda	Algoa legless skink	PNCO, IUCN NT	Y
Acontias meleagris orientalis	Eastern legless skink	PNCO, IUCNLC	U
Acontias percivali tasmani	Tasman's legless skink	PNCO, IUCN LC	U
Agama atra	Southern rock agama	PNCO, IUCN LC	Y
Aspidelapse lubricus	Cape coral snake	PNCO, IUCN LC	U
Bitis arietans	Puff adder	PNCO, IUCN LC	Y
Bradypodion ventrale	Southern Dwarf Chameleon	PNCO, IUCN LC, CITIES 2	U
Causus rhombeatus	Night adder	PNCO, IUCN LC	U
Chersina angulata	Angulate tortoise	PNCO, IUCN LC, CITIES 2	Y
Cordylus cordylus	Cape girdled lizard	PNCO, IUCN LC, CITIES 2	U
Cordylus tasmani	Tasman's girdled lizard	CITES 2 ,PNCO, IUCN VU	U
Crotaphopeltis hotamboeia	Herald snake	PNCO, IUCN LC	Y
Dasypeltis scabra	Rhombic egg eater	PNCO, IUCN LC	U
Hemachatus haemachatus	Rinkhals	PNCO, IUCN LC	Y
Hemidactylus mabouia	Tropical house gecko	PNCO, IUCN LC	U
Lamprophis aurora	Aurora house snake	PNCO, IUCN LC	U
Lamprophis capensis	Brown house snake	PNCO, IUCN LC	U
Lamprophis fuscus	Yellow bellied house snake	PNCO, IUCN NT	U
Lamprophis inornatus	Olive house snake	PNCO, IUCN LC	U
Lycodonomorphus rufulus	Brown water snake	PNCO, IUCN LC	U
Naja nivea	Cape cobra	PNCO, IUCN LC	Y
Nucras intertexta	Spotted Sandveld Lizard	PNCO	U
Pelomedusa subrufa	Marsh terrapin	PNCO, IUCN LC	U

Taxon	Common Name	RDB/SSC	Presence
Philothamnus natalensis occidentalus	Natal green snake	PNCO, IUCN LC	U
Psammophis notostictus	Karroo whip snake	PNCO, IUCN LC	U
Psammophylax rhombeatus	Rhombic skaapsteker	PNCO, IUCN LC	U
Pseudaspis cana	Mole snake	PNCO, IUCN LC	U
Stigmochelys pardalis	Leopard Tortoise	PNCO, IUCN LC CITIES 2	Y
Trachylepis capensis	Cape skink	PNCO, IUCN LC	Y
Trachylepis homalcephala	Red sided skink	PNCO, IUCN LC	U
Trachylepis varia varie	Variable skink	PNCO, IUCN LC	U
Varanus albigularis	Rock Monitor	PNCO, IUCN LC CITIES 2	U
Varanus niloticus	Water Monitor	PNCO, IUCN LC CITIES 2	U
Mammals			
Amblysomus corriae	Fynbos golden mole	PNCO, IUCN NT	U
Amblysomus hittentotus	Hottentot Golden Mole	PNCO, IUCN DD	U
Aonyx capensis	African clawless otter	PNCO, IUCN LC	U
Atilax paludinosus	Marsh mongoose	PNCO, IUCN LC	U
Caracal caracal	Caracal	PNCO, IUCN LC	U
Cercopithecus pygerythrus	Vervet monkey	PNCO, IUCN LC	Y
Chlorotalpa duthieae	Duthie's golden mole	PNCO, IUCN LC	U
Crocidura cyanea	Reddish-Grey Musk Shrew	PNCO, IUCN DD	U
Crocidura flavescens	Greater red musk shrew	PNCO, IUCN LC	U
Cryptomys hottentotus	African mole rat	PNCO, IUCN LC	Y
Cynictis penicillata	Yellow mongoose	PNCO, IUCN LC	Y
Dendromus melanotis	Grey climbing mouse	PNCO, IUCN LC	U
Dendromus mesomelas	Brant's climbing mouse	PNCO, IUCN LC	U
Felis cattus	Domestic cat	Alien	Y
Felis silvestris	African wild cat	PNCO, IUCN LC	U
Galerella pulverulenta	Cape grey mongoose	PNCO, IUCN LC	U
Genetta genetta	Small spotted genet	PNCO, IUCN LC	U
Genetta tigrina	Large spotted genet	PNCO, IUCN LC	U
Georychus capensis	Cape mole rat	PNCO, IUCN LC	U
Graphiurus murinus	Woodland dormouse	PNCO, IUCN LC	U
Graphiurus ocularis	Spectacled dormouse	PNCO, IUCN LC	U
Herpestes ichneumon	Large grey mongoose	PNCO, IUCN LC	U
Hystrix africaeaustralis	Cape porcupine	PNCO, IUCN LC	U
Ictonyx striatus	Striped pole cat	PNCO, IUCN LC	U
Lepus saxatilis	Scrub hare	PNCO, IUCN LC	Y
Macroscelides proboscideus	Round eared elephant shrew	PNCO, IUCN LC	U
Mastomys natalensis	Natal multimammate mouse	PNCO, IUCN LC	U
Mellivora capensis	Honey badger	PNCO, IUCN CITES 3 NT	U
Micaelamys namaquensis	Namaqua rock mouse	LC	U
Mus minutoides	Pygmy mouse	LC	U
Mus musculus	House mouse	Alien	U
Myosorex varius	Forest Shrew	PNCO, IUCN DD	U
Neoromicia capensis	Cape serotine bat	PNCO, IUCN LC	U
Nycteris thebaica	Egyptian slit faced bat	PNCO, IUCN LC	U
Orycteropus afer	Aardvark	PNCO, IUCN LC	U

Taxon	Common Name	RDB/SSC	Presence
Otocyon megalotis	Bat eared fox	PNCO, IUCN LC	U
Otomys irroratus	Vlei rat	PNCO, IUCN LC	Y
Otomys unisulcatus	Bush vlei rat	PNCO, IUCN LC	U
Panthera pardus	Leopard	PNCO, IUCN LC	U
Papio cynocephalus ursinus	Chacma baboon	PNCO, IUCN LC	U
Philantomba monticola	Blue duiker	PNCO, IUCN CITES2 VU	U
Poecilogale albinucha	African striped weasel	PNCO, IUCN VU	U
Potamochoerus larvatus	Bush pig	PNCO, IUCN LC	U
Raphicerus campestris	Steenbok	PNCO, IUCNLC	U
Raphicerus melanotis	Grysbok	PNCO, IUCNLC	U
Rattus rattus	House rat	PNCO, IUCN LC	U
Rhabdomys pumilio	Four striped grass mouse	PNCO, IUCN LC	Y
Saccostomus campestris	Pouched mouse	PNCO, IUCNLC	U
Suncus infinitesimus	Least dwarf shrew	PNCO, IUCN E	U
Sylvicapra grimmia	Common duiker	PNCO, IUCN LC	U
Tragelaphus scriptus	Bush buck	PNCO, IUCN LC	U
Vulpes chama	Cape Fox	PNCO, IUCN LC	U

Heritage:

Based on the extensively disturbed nature of the area proposed for development, it is considered very unlikely that the proposed development will impact on significant, in situ archaeological resources. In addition, there are clearly no structures of any kind located within the proposed development area which may have heritage significance. It is also considered very unlikely that significant palaeontological resources will be impacted by the proposed development.

1.4. Environmental Legislation

National Environmental Management Act, 1998 (Act 107 of 1998), as amended ("NEMA")

NEMA makes provision for the identification and assessment of activities that are potentially detrimental to the environment, and which require authorisation from the competent authority based on the findings of an Environmental Impact Assessment (EIA). NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). In the Eastern Cape, these powers are delegated to the Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape Province) (DEDEA). According to the list of activities identified under the EIA Regulations, by Listing Notice 1 (GN. R. 327), Listing Notice 2 (GN. R. 325), and Listing Notice 3 (GN. R. 324), published in Gazette No. 40772 on the 07 April 2017, the following activities are triggered and require environmental authorisation:

Listing Notice 1 (BASIC ASSESSMENT):

27 - The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for -
(i) the undertaking of a linear activity; or
(ii) maintenance purposes undertaken in accordance with a maintenance management plan.

National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA")

The NHRA, provides for the management of national heritage resources, to set norms and maintain national standards for the management of heritage resources in South Africa, and to protect heritage resources of national significance, so that heritage resources may be bequeathed to future generations. The Eastern Cape Provincial Heritage Authority (ECPHRA) is the competent authority in this regard.

National Water Act, 1998 (Act No. 36 of 1998) ("NWA")

The NWA is the primary statute providing the legal basis for water management in South Africa and has to ensure ecological integrity, economic growth and social equity when managing and using water. The fundamental objective of the National Water Act (Act 36 of 1998) is to ensure the protection of the aquatic ecosystems of South Africa's water resources.

1.5. The EMPr Document

An Environmental Management Plan (EMPr) can be defined as "*an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced*". EMPr's are therefore important tools for ensuring that the management actions arising from EIA processes are clearly defined and implemented through all phases of the project life cycle.

The EMPr forms part of the contract identifying and specifying the procedures to be followed by the Applicant in order to eliminate or reduce adverse impacts during the construction and operational phase. Should the owner or employee persistently fail to observe provisions of the EMPr, the Environmental Control Officer (ECO) should notify the relevant authority for a compliance audit, and possibly the prosecution of an individual or the removal of the individual from site.

The Environmental Contract ascribes legal status to the EMPr and any subsequent amendments thereto. The EMPr includes all relevant documentation within this report and/or referred to within it. The National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), and the respective Regulations are pertinent to this development. All activities on site must adhere and comply with the provisions of these Acts.

In general, the EMPr can consist of the following phases: ***planning & design***; ***pre-construction activities***; ***construction activities***; ***rehabilitation &/or decommissioning***; and lastly ***operational activities***. However, the need to include all the above phases is dependent on the scale and scope of each individual project. For the purposes of this application the following three categories are largely defined:

- **Planning, Design & Pre-construction Phase**: This section relates to the demarcating of the proposed activity footprint areas versus no-go areas.
- **Construction Phase**: This section relates to the construction of all buildings, roads and associated infrastructure to accommodate services.
- **Operational Phase**: This section is intended to guide the operation and maintenance aspects associated with the Industrial Park in line with relevant legislative requirements and the recommendations made by the specialist consultant (s).

Please note: The first two phases can overlap and are generally also referred to collectively as the CEMP (Construction Environmental Management Plan). The final phase can also be referred to as the OEMP (Operation Environmental Management Plan).

The EMPr will be reviewed by the ECO on an ongoing basis. Based on observations during site inspections and issues raised at site meetings, the ECO will determine whether any procedures require modification to improve

the efficiency and applicability of the EMPr on site. Any such changes or updates will be registered in the ECO's monthly record, as well as being included as an annexure to this document. Annexures of this nature must be distributed to all relevant parties on site.

The following content is required in the EMPr in accordance with Appendix 4 of the EIA Regulations:

a) *details of–*
   (i) *the EAP who prepared the ; and*
   (ii) *the expertise of that EAP to prepare an , including a curriculum vitae;*
b) *a detailed description of the aspects of the activity that are covered by and as identified by the project description;*
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;*
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;&*
   (v) *where relevant, operation activities;*
e) *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;*
   (i) *comply with any prescribed environmental management standards or practices;*
   (ii) *comply with any applicable provisions of the Act regarding closure, where applicable; &*
   (iii) *comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;*
f) *the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);*
g) *the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);*
h) *an indication of the persons who will be responsible for the implementation of the impact management actions;*
i) *the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;*
j) *the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);*
k) *a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;*
l) *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*
m) *any specific information that may be required by the competent authority.*

2. ENVIRONMENTAL IMPACTS

2.1. Impacts (after mitigation)

Impact 1: Loss of vegetation and in particular species / habitats that are listed as Vulnerable – LOW (-)

Impact 2: Loss and/or Fragmentation of Faunal Habitat - LOW (-)

Impact 3: The potential spread of alien vegetation – LOW (-)

Impact 4: Loss of wetland habitat and any functional corridors – VERY LOW (-)

Impact 5: Changes to the hydrological regime and increased potential for erosion - VERY LOW (-)

Impact 6: Changes to water quality - VERY LOW (-)

Impact 7: Impact on Heritage Resources - LOW (-)

Impact 8: Nuisance Impacts associated with the Construction Phase (e.g. Noise & Dust) – LOW (-)

Impact 9: Positive Socio-Economic impacts associated with the Construction & Operational Phase (e.g. job creation and stimulating the local economy) – HIGH (+)

2.2. Mitigation Measures

Pre/ Construction Phase:

- The project proponent/representative must notify ECPHRA of the date of commencement of the project or share the project schedule and Environmental Authorisation (EA).
- It is recommended that the Chance Finds Procedure be adopted and implemented throughout the construction phase of the development. The developer must get specialists' input in order to submit a detailed, site specific heritage & paleontological chance finds procedure (CFP), before the start of the pre/construction phase, for ECPHRA's approval. The CFP must outline stop-work procedures, emergency protection measures, reporting protocols, contact details for ECPHRA and approved heritage specialists, guidance on recognising heritage materials and graves. The CFP must form part of the EMPr and be available on site at all times.
- Heritage induction and training for all ground crew, must include identification of archaeological, palaeontological, historical, and burial-related material. This ensures lawful heritage compliance during all phases of the project.
- Heritage monitoring
- Should any archaeological resources or human remains be uncovered during the course of construction, work must cease and ECPHRA must be notified.
- All temporary works areas (laydowns and camps), where possible, must be placed in previously disturbed areas within the site, including any temporary access roads or storage areas, e.g. in areas where alien vegetation is dense and could be cleared for this purpose.
- Any protected or listed species that are mentioned in the Terrestrial Ecologists Report must be relocated with the requisite permits in place.
- Comply with search and rescue specifications as per the permits issued.
- The revegetation of any temporary sites, as well as any previously degraded areas, must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications particularly the remaining open space areas.
- Alien vegetation management must be initiated at the beginning of the construction period.
- No stormwater discharged may be directed to delineated aquatic zone (Figure 3 above).

- A construction and operational stormwater management plan must be developed post EA, detailing the structures and actions that must be installed to prevent the increase of surface water flows directly into any natural systems. Effective stormwater management must include measures to slow, spread and deplete the energy of concentrated flows thorough effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas.
- All construction materials including fuels and oil should be stored in demarcated areas that are contained within berms / bunds to avoid spread of any contamination.
- Washing and cleaning of equipment should also be done in berms or bunds, in order to trap any cement and prevent excessive soil erosion. Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any channel. It is therefore suggested that all construction camps, lay down areas, batching plants or areas and any stores should be located further than a temporary 85 m from a watercourse and wetland. Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early.
- Develop and implement emergency plans in case of any spillages.
- Littering and contamination of water sources during construction must be prevented by effective construction camp management.
- Emergency plans must be in place in case of spillages onto road surfaces and water courses.
- No stockpiling should take place within a water course, wetland or buffers and all stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.

<u>Operational Phase:</u>

- Upon completion of the project, a final heritage compliance report is to be submitted to ECPHRA.
- The revegetation of any temporary sites, as well as any previously degraded areas, must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications in particular the remaining open space areas.
- Alien vegetation management must be initiated at the beginning of the construction period and is ongoing.
- No stormwater discharged may be directed to delineated aquatic zone.
- A stormwater management plan must be developed, detailing the structures and actions that must be installed to prevent the increase of surface water flows directly into any natural systems.
- Effective stormwater management must include measures to slow, spread and deplete the energy of concentrated flows thorough effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas.
- Washing and cleaning of equipment should also be done in berms or bunds, in order to trap any cement and prevent excessive soil erosion. Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any channel. It is therefore suggested that all construction camps, lay down areas, batching plants or areas and any stores should be located further than a temporary 85 m from a watercourse and wetland.
- Develop and implement emergency plans in case of any spillages.
- Emergency plans must be in place in case of spillages onto road surfaces and water courses.

Monitoring:

- Regeneration of alien vegetation must be monitored once all areas have been cleared, forming part of a long-term alien vegetation management plan within any remaining open space areas.
- The revegetation of any temporary sites, as well as any previously degraded areas, must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications in particular the remaining open space areas.
- Alien vegetation management must be initiated at the beginning of the construction period.
- Any concentrated runoff and or erosion where observed must be rectified with the appropriate stormwater management measures, e.g. gabions, reno mattresses or energy dissipators, and not be discharged into any natural wetland features.
- Stormwater systems must be inspected on an annual basis to ensure these are functional.

Please refer to **Figure 4** showing the site to be developed in relation to the environmental sensitivities and no-go areas.

Figure 4: *Showing the site to be developed (inside red boundary) in relation to the environmental sensitivities and no-go areas.*

3. KEY STAKEHOLDERS

3.1 The Competent Authority

DEDEAT is the competent or lead authority in this instance. This Directorate has overall responsibility for ensuring that the Applicant complies with the conditions of its EA as well as this EMPr once approved. During the construction (and operational phases) of the EMPr the lead authority will have the following role to play:

- The authorities may perform random controls to check compliance.
- Review Monitoring and Audit reports, if required.
- Whenever necessary, the authorities are to aid in understanding and meeting the specified requirements.
- Recommend suitable corrective measures are undertaken by the Applicant where non-compliance has been reported.
- Enforcing compliance by the Applicant.

3.2 The Applicant

The Holder of the EA (e.g. the Applicant) is accountable for the potential impacts of the activities that are undertaken and is responsible for managing these impacts, both in the construction and operational phases. The Applicant therefore has overall and total environmental responsibility to ensure that the EMPr is implemented and that both the EMPr and the EA are complied with at all times. The Applicant is also responsible for ensuring that all other environmental related legislation is complied with. The Applicant is responsible for the development and implementation of the conditions of the EA in terms of the life cycle of the development.

Amongst the general responsibilities above the Applicant is also responsible for:

- Appointing an ECO and where required an environmental auditor.
- Take the necessary action in terms of non-compliances.
- Ensuring that all of the Applicant's, staff, representatives, contractors, consultants and any other agent operating under the employ of the Applicant comply with the EA.
- Considering the ECO's observations and recommendations and acting where required.

3.3 Environmental Control Officer (ECO)

A suitably qualified individual will be designated to fulfil the role of Environmental Control Officer, to ensure and oversee the implementation of the EMPr in its entirety on site during construction and earthworks on the entire site. The role of the ECO is essentially seen as an interactive one which involves site visits approximately once a month at the start of construction. Site visits may need to be less frequently during certain stages of the development, depending on the sensitivity of the area in which construction is taking place.

The responsibilities of the ECO or designated person during the construction phase of the project will include:

- To environmentally educate and raise the awareness of the Contractors and their staff as to the sensitivity of the site and to target responsible individuals as key players for environmental education, to facilitate the spread of the correct environmental attitude during the contract work.
- To review method statements and to determine the most environmentally sensitive options of modus operandi for the development tasks.
- To oversee the implementation of environmental procedures set out in this document.
- To attend site contractor's meetings and report on environmental issues.
- To receive notices and minutes of all site meetings.

- To maintain an open and direct channel of communication with the RE, who will be immediately aware of the actions of the ECO at all times, especially as they relate to implementation policy and corrective actions as detailed in this document.
- To take immediate action on site where clearly defined no-go areas are violated, or in danger of being violated, and to inform the RE and Site Manager immediately of the documents and the action taken.
- To keep an up-to-date record of works on site, as they relate environmental issues in the site diary.
- To be contactable by the public regarding matters of environmental concern as they relate to the development. Such matters shall be recorded in the Site Diary.
- To be responsible for auditing and reporting.

3.4 Contractor

The Contractor (as per definition this can be the Applicant as well) will be required, where specified, to provide Method Statements setting out in detail how the management actions contained in an EMPr will be implemented in order to ensure that the environmental management objectives are achieved. The responsibilities will include:

- Demarcating the no-go areas within the vicinity of the proposed activities through the appropriate fencing as discussed and agreed upon with the ECO.
- Complete Site Inspection Forms on a regular basis (eg. weekly).
- Provide inputs to the regular (eg. monthly) environment report to be prepared by the ECO.
- Liaise with the 'construction team' on issues related to implementation of, and compliance with, the EMPr.
- To oversee the implementation of environmental procedures set out in this document.
- Compilation of a maintenance routine, with tasks and budget and timing factors.
- Compilation of a monitoring plan.

3.5 The Environmental Auditor

Where required by the EA an environmental auditor will be appointed by the Applicant. The auditor will be an independent environmental consultant. The auditor will carry out a compliance audit based on the EA and of all of the activities being undertaken.

4. IMPACT MANAGEMENT OUTCOMES AND ACTIONS

This section includes a description of proposed impact management actions, identifying the manner in which the impact management outcomes will be achieved and, where applicable, include actions to avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation & comply with any prescribed environmental management standards or practices.

4.1 Pre-Construction Management Plan

The pre-construction or planning management plan is to be used as a guide during the planning, design and detailing of the development activity.

4.1.1 General Requirements:

A. Contractual Communication Procedures on Site

A logbook will be kept on site for the purposes of recording on-site instructions and as a general record of environmental issues. The diary must be kept for a minimum of two years after the activity is completed for the relevant authority to review if deemed necessary. A photographic record of before and after construction will be kept for visual reference purposes. The logbook will consist of three sections:

Environmental Site Instruction Section
The Environmental Site Instruction Section will be used for the recording of general site instructions relating to the protection of environmentally sensitive or potentially impacted areas or features on the site, by the ECO, to facilitate the issuing of the site instruction by the RE.

Site Diary Section
The purpose of this section will be to record the comments of the ECO as they relate to activities on the site, any problems encountered, or comments or complaints received from the public about works from the site.

Monitoring Section
The purpose of this section will be to record the comments of the ECO during Construction and the effective implementation of all mitigation measures (including terrestrial ecology, heritage, waste, recycling, landscaping and renewable energy measures etc.) used during the life cycle of project.

This book is to remain on site at all times and is to be made available for monitoring purposes by the local authority as required.

B. Communication/Contractual Network

There is to be continual communication between the Applicant; RE, Contractor, Site Manager and the ECO. The ECO will advise all on factors relating to the EMPr and all environmental matters on site.

The ECO is empowered to order the Contractor immediately to cease any activities or operations that are required to be stopped as a matter of urgency to prevent serious adverse environmental impacts or potential impacts on the site or any of the adjacent properties or areas outside the boundaries of the site. The ECO shall without delay report any such actions to the Competent Authority. The suspension will be enforced until corrective action has been taken, with no extension of time for such delays. In such a case, all costs are to be borne by the Contractor.

C. Method Statement Format

For any activity the Contractor is requested to submit a method statement for comment by the ECO, the format should clearly indicate the following:

- What: a brief description of the work to be undertaken;
- How: a detailed description of the process of work, methods and materials;

- Where: a description/sketch map of the locality of work; and
- When: the sequencing of actions with due commencement dates and completion date estimates.

The Contractor must submit the method statement to the ECO prior to the start of any construction activity. Work may not commence until the comments of the ECO have been received and taken into consideration.

D. Programming of Construction Events

The ECO must be supplied with a detailed program of all construction events to allow for proper monitoring and planning on site. Any amendments to the program of construction events for any reason must be forwarded to the ECO.

The project proponent/representative must notify ECPHRA of the date of commencement of the project or share the project schedule and Environmental Authorisation (EA).

E. Bylaws and Regulations

All national and provincial laws and regulations, as well as all local authority bylaws and regulations which apply to the development of this site are to be adhered to.

F. Safety

The Contractor is to appoint a safety steward, who will be responsible for safety of the labour force, construction activities and handling emergency situations on site during construction hours.

G. Emergency

All accidents and emergency situations are to be reported to the ECO and Site Manager and full details included in the monthly environmental report.

Develop and implement emergency plans in case of any spillages (e.g. onto road surfaces).

Fire

The contractor must take appropriate measures to guard against accidental fire, and it will be presumed that any bush fire which starts on the site, or within 100m thereof during the construction period would be the responsibility of the applicant.

In the case of a fire occurring on site, the Applicant and Site Manager (safety steward) are to be notified immediately. If localised an effort should be made to extinguish the fire immediately and if required, the assistance of the local fire department should be sought by the safety steward.

Fire beaters and "bakkie sakkie" are to be kept on site, and easily accessible at all times, and not locked away. No open fires may be lit anywhere on the construction site, except at locations approved by the ECO and Site Manager. The burning of refuse or vegetation material on site as a means of disposal will not be allowed unless a permit for burning is issued by the competent authority.

First Aid

The Contractor must provide and maintain a suitable first aid kit on site, with a member of staff suitable qualified in first aid on site during working hours, in accordance with the Occupational Health and Safety Act.

H. Public Complaints

All public complaints received are to be registered by the ECO or Site Manager and addressed immediately. Public complaints and responses are to be recorded in the Site Diary and included in the monthly environmental report by the ECO.

4.1.2 Design Requirements

During the lifespan of human habitation people generally waste on a daily basis. Examples of additional wastage are excessive electricity consumption for lighting and air-conditioning and excessive water usage.

A. Water Measures

The following Water Efficiency Measures will be implemented:

- Ensure that only water efficient devices such as low-flow taps, low-flow showerheads, washing machines and dishwashers are used.
- Ensure that all toilets are low volume (9.5 litres or less), with dual-flush or multi-flush.
- Ensure that outbuildings and outside taps and showers are fitted with metering tap buttons, which have set timers to prevent taps being left on or dripping.
- Design the layout of the plumbing system to avoid long pipe runs between the geyser and supply points.
- Reduce hard surfacing to encourage rainwater to seep back into the ground.
- Design paved areas so that water run-off is slowed down and where possible use soak-aways and permeable paving that allows water to filter into the ground.
- Ensure that the optimum pipe size and water pressure is used. A pressure reducing valve can be installed at a point nearest to where the supply enters the building to ensure that all water supplies in the building are balanced.
- Ensure all buildings are harvesting rainwater and encourage the re-use of grey water where appropriate. However, ensure that the local ecological system is not polluted and that it is managed correctly.
- To keep the volume of polluted water to be disposed of to a minimum, stormwater should not be mixed with greywater (e.g. from baths, showers, sinks, washing machines etc.).
- Ensure the use of indigenous planting and efficient irrigation methods, such as drip irrigation.

B. Energy Efficiency

Reducing the energy consumption of a building not only saves the environment but will also save on the running costs of the building. By designing energy efficient or renewable energy options into a building, the demand for electricity during peak consumption times is reduced. The following Energy Efficiency Measures will be implemented:

- Solar Energy is to be utilised as far as possible.
- Install properly insulated ceilings.
- Place and size windows to make optimal use of natural light, winter heating and ventilation without creating draughts, or gaining too much heat in summer or losing heat in winter.
- Avoid the use of air conditioning alternatively ensure that the correct size is installed and that use of the unit is minimised.
- Use air conditioners with a seasonal energy efficiency ratio of 10 or more (ratio of the seasonal energy output to the seasonal energy input).
- Ensure that the building is constructed to be tightly sealed, to prevent unwanted air flows. Doors and windows must be appropriately sized and fitted with seals.
- Energy efficient electrical installations must be used.
- Ensure that artificial lighting is designed so that light is focused where necessary, such as brighter areas where tasks are being performed and more ambient light elsewhere.
- Avoid the use of outdoor 'up-lighting' to reduce light pollution.
- Ensure that energy efficient light bulbs, such as CFLs or LEDs, are used.

- Reduce the electrical energy used to heat water by installation of solar water heaters, or at least geyser blankets, pipe insulation and a geyser timer.

C. Waste

Methods to reduce, reuse and recycle waste need to be encouraged through all aspects of the development:

- Aim for and promote Zero Waste in the planning, operation, management and maintenance of a building. Zero Waste emulates the closed loop processes found in nature, taking a 'cradle –to –cradle' approach to designing products and buildings.
- Build waste avoidance into the process at a design phase, by specifying products and materials that have less wasteful production processes and don't create wasteful emissions during construction and maintenance of a building.
- If waste is created, consider how this can firstly be re-used and then recycled to recover the value invested in these materials, rather than losing this value when the resource is dumped in a landfill or incinerated.
- Facilitate the separation of waste at the source for composting, re-use and recycling when designing waste management systems. People should be encouraged to recycle their household waste.
- Material used during construction or in the life-cycle of the project should be focused on renewable and recyclable elements:
  - Select building materials for durability to minimise maintenance or replacement;
  - Use standard materials to increase the potential for re-use and re-cycling;
  - Materials should be sourced locally where possible; and
  - Use recycled material where possible.

4.1.3 Site Establishment Requirements

A. Environmental Awareness Training for Site Personnel

All contractors/ sub-contractors involved in work on the development are to be briefed on their obligations towards the environmental controls and methodologies. The briefing will usually take the form of an on-site talk and demonstration by the ECO. The education program should be aimed at all levels of management within the Contractor team.

The environmental awareness education program should commence with entry onto the site, prior to any construction activities taking place by each team and is likely to be an ongoing process. All personnel are to be made aware of the details of the EMPr which will be applicable to them, in the languages of the site staff. Contractor teams must also be aware of penalties issued by the ECO in terms of environmental conduct on site, as well as safety and emergency procedures to be followed.

An initial environmental induction must occur to all sub-contractors and associated workers on environmental awareness, including minimisation of disturbance to areas of increased ecological sensitivity (i.e. freshwater ecosystems), as well as fauna and flora with a no poaching policy, management of waste and prevention of water pollution. Heritage induction and training for all ground crew, must include identification of archaeological, palaeontological, historical, and burial-related material. This ensures lawful heritage compliance during all phases of the project.

A regularly updated record is to be kept of all personnel attending the Environmental Awareness training sessions. Refer to **Annexure 4 - Environmental Awareness Plan**.

B. Site Definition and Demarcation

Prior to any works commencing on site a site survey is to be undertaken and the placement of boundary pegs (i.e. white stakes) along the no-go area are to be erected. Peg coding is to be communicated to the Contractor

and all other relevant parties as they may be identified. The area inside the white stakes is to be considered no-go areas. All areas outside the boundary of the property are naturally considered no-go areas and boundary fencing is to be secured in areas where work is to take place.

All 'fencing' is to be erected prior to construction works commencing on site and is to remain in position and in good repair for the duration of the construction phase. Once this has been done, all works, including stockpiling of construction materials are to be strictly confined to the demarcated area.

C. Protection of Sensitive Features

Sensitive areas within the development area, as identified by the ECO, should be fenced off prior to the start of construction on site (where applicable), to ensure minimum disturbance to these areas during construction activities. Any required buffer areas or no-go areas should be marked prior to the start of construction on site and communicated to the Site Manager. Refer to Section B above. The sensitive and no-go area for development is indicated on the Environmental Sensitivities Map (Figure 4 above).

Search & Rescue:
Any protected or listed species that are mentioned in the Terrestrial Ecologists Report must be relocated with the requisite permits in place. All search and rescue specifications as per the permits issued are to be complied with.

Vegetation
All protected elements/areas located on the site, will be clearly marked, and care should be taken by the ECO to ensure that they are not unnecessarily disturbed during construction works on site. All alien vegetation must be removed according to standard legislated alien clearing methods.

Damage to the indigenous vegetation anywhere on the site (outside of the approved area) will be subject to penalties.

Rivers, Riparian Habitat & Wetlands (none on site)
No pollutants must be allowed to enter any river system or any other ecologically sensitive areas during the construction phase. No waste or foreign materials may be dumped into streams or wetlands. These areas must also not be used for cleaning clothing, tools, or equipment.

Reptiles, birdlife and mammals
Due to the fact that there are vegetated areas next to the site reptiles, birdlife and mammals occur and move through the system. Any living organism needs to be respected during the construction phase and should not be killed or ran over. Every effort should be made to save and relocate any mammal, reptile, amphibian, bird, or invertebrate that cannot flee of its own accord, encountered during site preparation (i.e., to avoid and minimise the direct mortality of faunal species). These animals should be relocated to a suitable habitat area immediately outside the project footprint (in the adjoining natural habitats of the site), but under no circumstance to an area further away.

No illegal hunting (either through illegal methods or of rare or threatened species) should be allowed on the site.

Archaeological, palaeontological, historical, and burial-related material
The project proponent/representative must notify ECPHRA of the date of commencement of the project or share the project schedule and Environmental Authorisation (EA).

It is recommended that the Chance Finds Procedure be adopted and implemented throughout the construction phase of the development. The developer must get specialists' input in order to submit a detailed, site specific heritage & paleontological chance finds procedure (CFP), before the start of the pre/construction phase, for ECPHRA's approval. The CFP must outline stop-work procedures, emergency protection measures, reporting protocols, contact details for ECPHRA and approved heritage specialists, guidance on recognising heritage materials and graves. The CFP must form part of the EMPr and be available on site at all times.

Should any archaeological resources or human remains be uncovered during the course of construction, work must cease and ECPHRA must be notified.

Upon completion of the project, a final heritage compliance report is to be submitted to ECPHRA.

D. Vegetation Clearance

Implement a phased clearing approach, limiting vegetation clearance to areas required for active construction only to prevent unnecessary exposure of bare ground (vulnerable to erosion and resulting in dust pollution).

Alien vegetation directly adjacent or in close proximity to the construction area should be removed in line with alien clearing methods outlined in **Appendix 6: A Practical Guide to Managing Alien Invasive Plants**.

No vegetation may be removed using fires, and no excess vegetation material may be burned on site. No natural vegetation outside of the site may be removed without approval of the ECO, apart from invasive plant species which are to be removed according to a controlled program.

Once all vegetation clearing is complete, all vegetation and any removed excess material must be disposed of at a licensed refuse facility and may not be mulched or burned on site (unless all approvals have been obtained).

E. Contractor's Camp

All construction camps, lay down areas, batching plants or areas and any stores should be located further than a temporary 85 m from a watercourse and wetland. [There are none within 85 m of the site.]

All temporary works areas (laydowns and camps), where possible, must be placed in previously disturbed areas within the site, including any temporary access roads or storage areas, e.g. in areas where alien vegetation is dense and could be cleared for this purpose.

Littering and contamination of water sources during construction must be prevented by effective construction camp management.

Contractor laydown areas, vehicle re-fuelling areas, stockpiles and material storage facilities to remain outside of all no-go / sensitive areas. A designated contractor laydown area must be approved by the Environmental Control Officer (ECO) prior to use. Protect exposed soils by means of a geotextile fabric such as hessian sheeting. Site clearing activities (including for contractor laydown areas) are to remain within the authorised footprint and vegetation clearing is to be limited to what is essential within that active footprint.

F. Toilet Facilities

Suitable sanitary facilities must be provided by the contractor for all staff on site. The Contractor should ensure that ablutions are restricted to the sanitary facilities. Where chemical toilets are provided, the Contractor should ensure that they are kept in hygienic condition and emptied on a regular basis. Waste from the toilets should be disposed of to the satisfaction of the ECO.

Care must be taken that no spillage occurs when chemical toilets are cleaned, and their contents are properly stored and removed off site. A contingency plan for spills must be supplied by the contractor and approved by the ECO. Toilets should be located where their use would result in minimal impact on the surrounding environment and may not be in areas of running or standing water during winter and must be secured to prevent them from blowing over.

G. Noise Management

The contractor must take appropriate measures to limit the impact of unreasonable noise from construction activities on the neighbouring land users.

Restrict working hours to weekdays and half day Saturday. No work (apart from vital tasks) on Sundays and public holidays. Create awareness on site of workers to keep noise levels down outside of working hours.

All transport vehicles and machinery/equipment used onsite must be regularly maintained and kept in good working order to prevent excessive noise.

4.2 Construction Management Plan

4.2.1 Material handling and storage

Fuels and flammable materials are to be stored in suitably equipped storage areas. These areas shall comply with general fire safety requirements. Impervious materials are to be used in these storage areas to prevent contamination of the ground in the event of spillages or leaks. Quantities of fuels and hazardous materials stored on site should be appropriate to the requirement for these substances on site.

Immediately clean any accidental oil or fuel spills or leaks. Do not hose or wash spills into the surrounding natural environment.

Bulk fuel depots are to be placed within hardened bunded areas. Bunds are to have a holding capacity equal to 110% of the largest fuel container. The Contractor is to ensure that he is aware of the effects of all substances on staff and the environment, with the correct action to take in the case of any incident involving these materials. All construction materials including fuels and oil should be stored in demarcated areas that are contained within berms / bunds to avoid spread of any contamination.

Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early.

All operations involving the use of cement and concrete (outside of the batching plant) must be carefully controlled. Limit cement and concrete mixing to designated sites wherever possible.

4.2.2 Waste Management

The Contractor will be responsible for materials to be re-used on site or removed to a Municipal Transfer Facility and for materials to be disposed of at the municipal landfill site. Management of building material to be sold to the building industry will be the responsibility of the Contractor/Owner.

Waste management during the construction phase is the responsibility of the Contractor. The Contractor must establish a system acceptable to the ECO for control during execution of the works. Refuse refers to all construction debris (cement bags, rubble, timber, cans, nails, wire, spilt bitumen, glass, packaging, plastic, organic matter, etc.). Refuse generated during the execution phase of the works should be stored in an appropriate area on site, protected against wind dispersion and removed on a regular basis for disposal of at a

permitted disposal site. No burning or burying of refuse on site should be allowed. Refuse bins must be watertight and wind-proof. Materials suitable for recycling to be sorted and stored in a marked bin to be disposed of at the municipal transfer facility.

Pollution of the development footprints (either through the leaking of chemicals such as oil and fuel, or through discarding of waste), as well as any areas adjacent to these footprints, should be monitored and avoided.

The Contractor shall provide adequate refuse bins at all eating areas and ensure that they are used. Bins are to be cleared on a daily basis.

4.2.3 Maintenance of equipment

All mechanical equipment and work vehicles which may be kept on site are to be stored, serviced and refuelled only at designated areas within the Contractor's Camp. Within these areas drip trays and other impervious materials, for example plastic or metal sheeting are to be used to prevent contamination of the ground in any way.

The RE or ECO may order the removal of equipment that is causing continual environmental damage by leaking oil or diesel for example, until such equipment has been repaired.

Washing and cleaning of equipment should also be done in berms or bunds, in order to trap any cement and prevent excessive soil erosion. Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any channel.

4.2.4 Topsoil Removal and Stockpiling

Where services are to be installed, topsoil is to be removed from the work areas, stockpiled separately from subsoil, and must be stabilised within a day of stockpiling. Stockpiles should be convex at the top to promote run- off, so that water is not able to accumulate and result in leaching of nutrients from the soil.

No stockpiling should take place within a water course, wetland or buffers and all stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.

4.2.5 Stormwater and Erosion Control/Management

A construction and operational stormwater management plan must be developed, detailing the structures and actions that must be installed to prevent the increase of surface water flows directly into any natural systems.

Effective stormwater management must include measures to slow, spread and deplete the energy of concentrated flows thorough effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas.

No stormwater discharged may be directed to delineated aquatic zone (Pan/ Depression shown in Figure 3 above).

Care must be taken at all times to prevent erosion of soils on the construction site. Should any erosion be detected on site, the ECO, RE or Site Manager must identify the cause of such erosion and ensure that the most appropriate method of mitigation or stabilisation is employed as soon as possible.

4.2.6 Dust Control

Areas where dust will impact on neighbouring properties should be cleared during low wind conditions to avoid dust impact. Minimise area to be cleared around each unit and clear land areas in phases as required to minimize unnecessary exposure of bare ground.

A suitable speed limit (20-40km/h) must be enforced on all gravel/ dirt roads.

All exposed soils must be protected for the duration of the construction phase with a suitable geotextile (e.g. Geotextile or hessian sheeting) to prevent dust generation that could potentially result in vegetation smothering.

Suitable dust suppression techniques must be utilised. Regularly wet down exposed soils, haul roads and/ or stockpiles using water trucks or sprinklers (but AVOID water logging and run-off). Water can be obtained from the existing Dams on site in this regard.

4.2.7 Earth Shaping

Any major earth works are to be restricted to the site boundaries. Bulldozer and heavy machinery operations are to be under constant supervision and must be aware of all the environmental obligations and penalties for transgressions, as they have the potential to inflict severe damage to the surrounding environment.

The use and excessive movement of heavy machinery should be avoided in particularly sensitive areas with great environmental value, or high erosion potential.

4.2.8 Construction Traffic Management

Movement of all construction vehicles on site is to be strictly limited to existing/ approved haul and access routes at all times. Should deviation from these routes be necessary for any reason, this is to be with approval of the ECO who is to ensure that no significant environmental damage results.

Vehicles must be regularly inspected for leaks and be refuelled on sealed surfaces to prevent ingress into soils. All spills are to be immediately cleaned up and must be treated accordingly. Dedicated parking area for construction vehicles must be located away from sensitive areas, and drip trays must be located beneath any leaking equipment and lubricant/fuel absorbing media (moss/peat type products) within drip trays must be used to contain spilled material.

4.2.9 Site Clean Up/ Rehabilitation

The Contractor must ensure that all structures, equipment materials and facilities used on site are removed once the project has been completed. The construction site shall be cleared and cleaned to the satisfaction of the ECO.

The revegetation of any temporary sites, as well as any previously degraded areas, must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications particularly the remaining open space areas.

4.2.10 Alien Clearing

Alien vegetation management must be initiated at the beginning of the construction period. Invasive alien plants/ trees are to be removed and treated according to standard alien control methods.

According to Regulation 15E of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) Regulations: Where category 1, 2 or 3 plants occur contrary to the provisions of these regulations, a land user shall control such plants by means of one or more of the following methods of control as is appropriate for the species concerned and the ecosystem in which it occurs:

a. *Uprooting, felling, cutting ~~or burning~~;*
b. *Treatment with a weed killer that is registered for use in connection with such plants in accordance with the directions for the use of such a weed killer;*
c. *Biological control carried out in accordance with the stipulations of the Agricultural Pests Act, 1983 (Act No. 36 of 1983), the Environment Conservation Act, 1989 (Act No. 73 of 1989) and any other applicable legislation;*
d. *Any other method of treatment recognised by the executive officer that has as its object the control of the plants concerned, subject to the provisions of sub-regulation (4);*
e. *A combination of one or more of the methods prescribed in paragraphs (a), (b), (c), and (d), save that biological control reserves and areas where biological control agents are effective shall not be disturbed by other control methods to the extent that the agents are destroyed or become ineffective.*

Alien vegetation, specifically invasive and pioneer species which may find a niche to encroach disturbed areas, must be monitored and controlled.

Please refer to **Annexure 5: A Practical Guide to Managing Invasive Alien Plants, WWF**.

4.2.11 Fire Prevention/ Management

The Contractor shall ensure that basic fire-fighting equipment is available at all 'construction' areas and facilities. The workforce should be appropriately trained in the use of all equipment. Fire beaters and "bakkie sakkie" are to be kept on site, and easily accessible at all times, and not locked away.

Smoking shall not be permitted in areas where it is a fire hazard. Such areas shall include any workshop and fuel storage areas and areas where the vegetation or other material may promote the rapid spread of an initial flame. A fire extinguisher of the appropriate type must be present when welding or other "hot" activities are undertaken.

Any work that requires the use of fire or open flame may only take place at a designated area approved by the ECO and must be supervised at all times. Serviced fire-fighting equipment shall be available.

Please refer to **Annexure 6: Landowners Guide to Fire Management**.

4.2.12 Environmental Control Sheets:

A. Communications

TASK	MITIGATION AND ENVIRONMENTAL CONTROLS	ACTION
Site Diary and Site Instruction Book	• To be updated on a regular basis	ECO
Public complaints	• To be recorded, along with records of responses to them in the Site Diary	ECO/ Contractor
Environmental Awareness/ Education	• Each contractor team to attend a training session prior to commencing work on site Record of members attending training sessions to be kept and updated regularly	ECO
Method Statements	• Method statements to indicate: What, How, Where and When activities are to take place. • Method statements for each relevant activity to be submitted to ECO prior to the start of that activity on site. • Work is not to commence until method statement approved by ECO and Site Manager if necessary.	Contractor
Pre-Construction and Planning Implementation	• Programming of construction events • By-laws and Regulations • Protection of Sensitive Features • Emergency, Safety and Fire control • Waste, Water & Energy Guidelines	Contractor/ ECO

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Acceptable		Details of Transgression	Responsible Party	Action Taken	Date
Yes	**No**				

B. Site Preparation

TASK	MITIGATION AND ENVIRONMENTAL CONTROLS	ACTION
Site definition	- Prior to any works commencing on site a site survey is to be undertaken and the placement of boundary pegs (i.e. white stakes) along the no-go area are to be erected. Peg coding is to be communicated to the Contractor and all other relevant parties as they may be identified. The area inside the white stakes is to be considered no-go areas. All areas outside the boundary of the property are naturally considered no-go areas and boundary fencing is to be secured in areas where work is to take place. - All 'fencing' is to be erected prior to construction works commencing on site and is to remain in position and in good repair for the duration of the construction phase. Once this has been done, all works, including stockpiling of construction materials are to be strictly confined to the demarcated area.	Surveyor/ ECO/ Contractor
Sensitive features [Search & Rescue]	- Sensitive areas within the development area, as identified by the ECO, should be fenced off prior to the start of construction on site (where applicable), to ensure minimum disturbance to these areas during construction activities. Any required buffer areas or no-go areas should be marked prior to the start of construction on site and communicated to the Site Manager. - Any protected or listed species that are mentioned in the Terrestrial Ecologists Report must be relocated with the requisite permits in place. All search and rescue specifications as per the permits issued are to be complied with.	Contractor/ ECO
Vegetation	- All protected elements/areas located on the site, will be clearly marked, and care should be taken by the ECO to ensure that they are not unnecessarily disturbed during construction works on site. All alien vegetation must be removed according to standard legislated alien clearing methods. - Damage to the indigenous vegetation anywhere on the site (outside of the approved area) will be subject to penalties.	
Rivers, Riparian Habitat & Wetlands [none on site]	- No pollutants must be allowed to enter any river system or any other ecologically sensitive areas during the construction phase. No waste or foreign materials may be dumped into streams or wetlands. These areas must also not be used for cleaning clothing, tools, or equipment.	
Reptiles, birdlife and mammals	- Due to the fact that there are vegetated areas next to the site reptiles, birdlife and mammals occur and move through the system. Any living organism needs to be respected during the construction phase and should not be killed or ran over. Every effort should be made to save and relocate any mammal, reptile, amphibian, bird, or invertebrate that cannot flee of its own accord, encountered during site preparation (i.e., to avoid and minimise the direct mortality of faunal species). These animals should be relocated to a suitable habitat area immediately outside the project footprint (in the adjoining natural habitats of the site), but under no circumstance to an area further away. - No illegal hunting (either through illegal methods or of rare or threatened species) should be allowed on the site.	
Archaeological, palaeontological, historical, and burial-related material	- The project proponent/representative must notify ECPHRA of the date of commencement of the project or share the project schedule and Environmental Authorisation (EA). - It is recommended that the Chance Finds Procedure be adopted and implemented throughout the construction phase of the development. The developer must get specialists' input in order to submit a detailed, site specific heritage & paleontological chance finds procedure (CFP), before the start of	

	the pre/construction phase, for ECPHRA's approval. The CFP must outline stop-work procedures, emergency protection measures, reporting protocols, contact details for ECPHRA and approved heritage specialists, guidance on recognising heritage materials and graves. The CFP must form part of the EMPr and be available on site at all times. - Should any archaeological resources or human remains be uncovered during the course of construction, work must cease and ECPHRA must be notified.	
Vegetation clearance	- Implement a phased clearing approach, limiting vegetation clearance to areas required for active construction only to prevent unnecessary exposure of bare ground (vulnerable to erosion and resulting in dust pollution). - Alien vegetation directly adjacent or in close proximity to the construction area should be removed in line with alien clearing methods outlined in Appendix 6: A Practical Guide to Managing Alien Invasive Plants. - No vegetation may be removed using fires, and no excess vegetation material may be burned on site. No natural vegetation outside of the site may be removed without approval of the ECO, apart from invasive plant species which are to be removed according to a controlled program. - Once all vegetation clearing is complete, all vegetation and any removed excess material must be disposed of at a licensed refuse facility and may not be mulched or burned on site (unless all approvals have been obtained).	ECO/ Contractor
Contractor's Camp	- All construction camps, lay down areas, batching plants or areas and any stores should be located further than a temporary 85 m from a watercourse and wetland. [There are none within 85 m of the site.] - All temporary works areas (laydowns and camps), where possible, must be placed in previously disturbed areas within the site, including any temporary access roads or storage areas, e.g. in areas where alien vegetation is dense and could be cleared for this purpose. - Littering and contamination of water sources during construction must be prevented by effective construction camp management. - Contractor laydown areas, vehicle re-fuelling areas, stockpiles and material storage facilities to remain outside of all no-go / sensitive areas. A designated contractor laydown area must be approved by the Environmental Control Officer (ECO) prior to use. Protect exposed soils by means of a geotextile fabric such as hessian sheeting. Site clearing activities (including for contractor laydown areas) are to remain within the authorised footprint and vegetation clearing is to be limited to what is essential within that active footprint.	ECO/ Contractor
Toilet Facilities	- Suitable sanitary facilities must be provided by the contractor for all staff on site. The Contractor should ensure that ablutions are restricted to the sanitary facilities. Where chemical toilets are provided, the Contractor should ensure that they are kept in hygienic condition and emptied on a regular basis. Waste from the toilets should be disposed of to the satisfaction of the ECO. - Care must be taken that no spillage occurs when chemical toilets are cleaned, and their contents are properly stored and removed off site. A contingency plan for spills must be supplied by the contractor and approved by the ECO. Toilets should be located where their use would result in minimal impact on the surrounding environment and may not be in areas of running or standing water during winter and must be secured to prevent them from blowing over.	ECO/ Contractor
Noise Management	- The contractor must take appropriate measures to limit the impact of unreasonable noise from construction activities on the neighbouring land users.	ECO/ Contractor

	- Restrict working hours to weekdays and half day Saturday. No work (apart from vital tasks) on Sundays and public holidays. Create awareness on site of workers to keep noise levels down outside of working hours. - All transport vehicles and machinery/equipment used onsite must be regularly maintained and kept in good working order to prevent excessive noise.	

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Acceptable		**Details of Transgression**	**Responsible Party**	**Action Taken**	**Date**
Yes	**No**				

C. Site Procedures

TASK	MITIGATION AND ENVIRONMENTAL CONTROLS	ACTION
Material handling and storage	- Fuels and flammable materials are to be stored in suitably equipped storage areas. These areas shall comply with general fire safety requirements. Impervious materials are to be used in these storage areas to prevent contamination of the ground in the event of spillages or leaks. Quantities of fuels and hazardous materials stored on site should be appropriate to the requirement for these substances on site. - Immediately clean any accidental oil or fuel spills or leaks. Do not hose or wash spills into the surrounding natural environment. - Bulk fuel depots are to be placed within hardened bunded areas. Bunds are to have a holding capacity equal to 110% of the largest fuel container. The Contractor is to ensure that he is aware of the effects of all substances on staff and the environment, with the correct action to take in the case of any incident involving these materials. - All construction materials including fuels and oil should be stored in demarcated areas that are contained within berms / bunds to avoid spread of any contamination. - Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early. - All operations involving the use of cement and concrete (outside of the batching plant) must be carefully controlled. Limit cement and concrete mixing to designated sites wherever possible.	Contractor
Waste management	- The Contractor will be responsible for materials to be re-used on site or removed to a Municipal Transfer Facility and for materials to be disposed of at the municipal landfill site. Management of building material to be sold to the building industry will be the responsibility of the Contractor/Owner. - Waste management during the construction phase is the responsibility of the Contractor. The Contractor must establish a system acceptable to the ECO for control during execution of the works. Refuse refers to all construction debris (cement bags, rubble, timber, cans, nails, wire, spilt bitumen, glass, packaging, plastic, organic matter, etc.). Refuse generated during the execution phase of the works should be stored in an appropriate area on site, protected against wind dispersion and removed on a regular basis for disposal of at a permitted disposal site. No burning or burying of refuse on site should be allowed. Refuse bins must be watertight and wind-proof. Materials suitable for recycling to be sorted and stored in a marked bin to be disposed of at the municipal transfer facility. - Pollution of the development footprints (either through the leaking of chemicals such as oil and fuel, or through discarding of waste), as well as any areas adjacent to these footprints, should be monitored and avoided. - The Contractor shall provide adequate refuse bins at all eating areas and ensure that they are used. Bins are to be cleared on a daily basis.	Contractor/ ECO
Maintenance of equipment	- All mechanical equipment and work vehicles which may be kept on site are to be stored, serviced and refuelled only at designated areas within the Contractor's Camp. Within these areas drip trays and other impervious materials, for example plastic or metal sheeting are to be used to prevent contamination of the ground in any way. - The RE or ECO may order the removal of equipment that is causing continual environmental damage by leaking oil or diesel for example, until such equipment has been repaired.	Contractor

Topsoil Removal and Stockpiling	- Washing and cleaning of equipment should also be done in berms or bunds, in order to trap any cement and prevent excessive soil erosion. Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any channel. - Where services are to be installed, topsoil is to be removed from the work areas, stockpiled separately from subsoil, and must be stabilised within a day of stockpiling. Stockpiles should be convex at the top to promote run- off, so that water is not able to accumulate and result in leaching of nutrients from the soil. - No stockpiling should take place within a water course, wetland or buffers and all stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.	Contractor/ ECO
Stormwater and Erosion Control/ management	- A construction and operational stormwater management plan must be developed, detailing the structures and actions that must be installed to prevent the increase of surface water flows directly into any natural systems. - Effective stormwater management must include measures to slow, spread and deplete the energy of concentrated flows thorough effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas. - No stormwater discharged may be directed to delineated aquatic zone (Pan/ Depression shown in Figure 3 above). - Care must be taken at all times to prevent erosion of soils on the construction site. Should any erosion be detected on site, the ECO, RE or Site Manager must identify the cause of such erosion and ensure that the most appropriate method of mitigation or stabilisation is employed as soon as possible.	Contractor/ ECO
Dust control	- Areas where dust will impact on neighbouring properties should be cleared during low wind conditions to avoid dust impact. Minimise area to be cleared around each unit and clear land areas in phases as required to minimize unnecessary exposure of bare ground. - A suitable speed limit (20-40km/h) must be enforced on all dirt/gravel roads. - All exposed soils must be protected for the duration of the construction phase with a suitable geotextile (e.g. Geotextile or hessian sheeting) to prevent dust generation that could potentially result in vegetation smothering. - Suitable dust suppression techniques must be utilised. Regularly wet down exposed soils, haul roads and/ or stockpiles using water trucks or sprinklers (but AVOID water logging and run-off). Water can be obtained from the existing Dams on site in this regard.	Contractor/ ECO
Earth Shaping	- Any major earth works are to be restricted to the site boundaries. Bulldozer and heavy machinery operations are to be under constant supervision and must be aware of all the environmental obligations and penalties for transgressions, as they have the potential to inflict severe damage to the surrounding environment. - The use and excessive movement of heavy machinery should be avoided in particularly sensitive areas with great environmental value, or high erosion potential.	Contractor
Construction traffic management	- Movement of all construction vehicles on site is to be strictly limited to existing/ approved haul and access routes at all times. Should deviation from these routes be necessary for any reason, this is to be with approval of the ECO who is to ensure that no significant environmental damage results.	Contractor/ ECO

	- Vehicles must be regularly inspected for leaks and be refuelled on sealed surfaces to prevent ingress into soils. All spills are to be immediately cleaned up and must be treated accordingly. Dedicated parking area for construction vehicles must be located away from sensitive areas, and drip trays must be located beneath any leaking equipment and lubricant/fuel absorbing media (moss/peat type products) within drip trays must be used to contain spilled material.	
Site Clean-up / Rehabilitation	- The Contractor must ensure that all structures, equipment materials and facilities used on site are removed once the project has been completed. The construction site shall be cleared and cleaned to the satisfaction of the ECO. - The revegetation of any temporary sites, as well as any previously degraded areas, must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications particularly the remaining open space areas.	Contractor/ ECO
Alien Clearing	- Invasive alien plants/ trees are to be removed and treated according to standard alien control methods (**Annexure 5**: A Practical Guide to Managing Invasive Alien Plants, WWF.)	Owner
Fire Prevention / Management	- The Contractor shall ensure that basic fire-fighting equipment is available at all 'construction' areas and facilities. The workforce should be appropriately trained in the use of all equipment. Fire beaters and "bakkie sakkie" are to be kept on site, and easily accessible at all times, and not locked away. - Smoking shall not be permitted in areas where it is a fire hazard. Such areas shall include any workshop and fuel storage areas and areas where the vegetation or other material may promote the rapid spread of an initial flame. A fire extinguisher of the appropriate type must be present when welding or other "hot" activities are undertaken. - Any work that requires the use of fire or open flame may only take place at a designated area approved by the ECO and must be supervised at all times. Serviced fire-fighting equipment shall be available. (Annexure 6: Landowners Guide to Fire Management.)	
Heritage Monitoring	- Heritage monitoring must be undertaken during the construction phase. - Upon completion of the project, a final heritage compliance report is to be submitted to ECPHRA.	
TASK	**MITIGATION AND ENVIRONMENTAL CONTROLS**	**ACTION**

COMMENTS/ UPDATE

RECORD OF PERFORMANCE

Acceptable		**Details of Transgression**	**Responsible Party**	**Action Taken**	**Date**
Yes	**No**				

4.3 Components of Operational Management

- Goals: The key environmental goals are set for the operation of the development
- Objectives: These are set to meet the goals.
- Risk: If the goal is not achieved.
- Actions: Measures put in place to achieve objectives.
- Monitoring: To check if the objectives are achieved.
- Targets: Indicators of the effectiveness of the programme.
- Remedial Action: If targets are not met.

4.3.1 Goals (Management Outcomes and Actions):

The management outcomes and actions are laid out below:

GOAL 1: STORM WATER MANAGEMENT			
Objective	**Successful implementation of a Stormwater Management Plan.**		
Risk	**Actions**	**Monitoring**	**Targets**
Flooding, erosion and/ or pollution.	A construction and operational stormwater management plan must be developed, detailing the structures and actions that must be installed to prevent the increase of surface water flows directly into any natural systems. Effective stormwater management must include measures to slow, spread and deplete the energy of concentrated flows thorough effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas. The stormwater management plan ensures that any impacts of stormwater from the site are mitigated as far as possible within the site to minimise the stormwater impacts. Any concentrated runoff and or erosion where observed must be rectified with the appropriate stormwater management measures, e.g. gabions, reno mattresses or energy dissipators, and not be discharged into any natural wetland features. No stormwater discharged may be directed to delineated aquatic zone (pan/ depression shown in Figure 3 above). Stormwater systems must be inspected on an annual basis to ensure these are functional. Alien Clearing must be undertaken in accordance with **GOAL 4: ALIEN CLEARING AND VELDFIRE MANAGEMENT**.		Implementation of the stormwater management plan to ensure stormwater exiting the site meets the requirements in terms of quality and volume.
Remedial Action	If erosion has occurred, it must immediately be rehabilitated through stabilisation of embankments and revegetation, where applicable.		
PERFORMANCE			
Date	**Details of Transgression**	**Responsible Party**	**Action Taken**

GOAL 2: EMERGENCY PREPAREDNESS AND RESPONSE MANAGEMENT		
Objective	**Effective containment and storage of fuel and other chemical/ hazardous substances.**	
Risk	**Actions & Monitoring:**	**Targets**
Pollution Liability Death	It is essential that the following **<u>Emergency Plan</u>** is implemented to ensure a quick response and attendance to the matter in case of a leakage, spillage, fire etc. Emergency Procedures are as follows: 1. General Safety Rules - No smoking, flames, or sparks near flammable hazardous materials. - Keep hazardous materials locked away when not in use. - Ensure spill kit, fire extinguishers, and PPE are always nearby (location known to staff). - Emergency contact list must be visible at appropriate locations on site. 2. In Case of a Fire - Raise the alarm – shout for help and activate the fire alarm if available. - Call Fire Department immediately – provide location and type of fire. - Fire Department Emergency Number: 041 585 1555 <u>If safe:</u> - Use foam or dry chemical extinguisher for small fires only. - If fire is too large – evacuate to the facility assembly point. 3. In Case of a Hazardous Liquid Spill or Leak <u>Contain the spill:</u> - Use the bunded area to keep the hazardous liquid from spreading. - Deploy absorbent pads, booms, or soil to block flow. - Prevent the liquid from entering drains, boreholes, streams, or soil. <u>Clean up:</u> - Use spill kit absorbents; place used material in sealed disposal bags. - Store contaminated soil/materials safely for disposal by a licensed waste company. - Report: Log incident in the environmental register and inform authorities if spill >200 L. 4. In Case of Health Exposure	No soil or groundwater contamination. Minimal damages associated with Emergency situations.

	- Inhalation: Move person to fresh air, keep warm, monitor breathing. - Skin contact: Wash thoroughly with soap and water. - Eye contact: Flush eyes with clean water for at least 15 min. - Ingestion: seek medical help immediately. 5. Evacuation Procedure - Sound alarm and move all staff to the designated safe assembly point (e.g. open area upwind of the fire). - Supervisor conducts head count. - No one re-enters until declared safe by emergency responders. <u>Preparedness/ Monitoring:</u> - Keep extinguishers serviced and spill kits restocked. - Train staff annually on fire and spill response. - Keep access roads clear for emergency vehicles. Hazardous materials (chemicals, fuels, oils) should be stored appropriately to prevent contamination. Accidental spills that occur on site should be cleaned up immediately and appropriately. Care should be taken when fuel for maintenance equipment is used/stored to avoid spillage and contaminating soil.	
Remedial Action	If a spillage or leakage event occurs, it should be reported to the relevant authorities and the necessary actions taken to contain the spill and reduce any negative impact. Non-compliance to be reported.	

PERFORMANCE

Date	**Details of Transgression**	**Responsible Party**	**Action Taken**

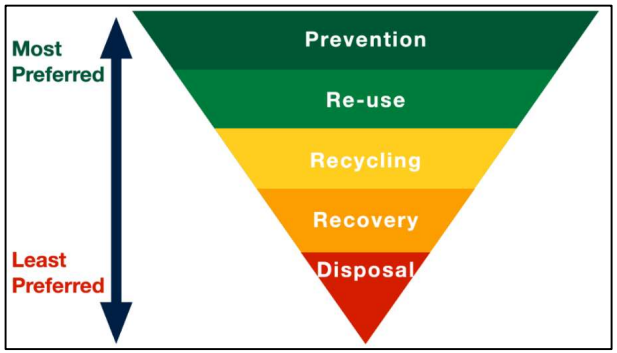
GOAL 3: CONSERVATION MANAGEMENT OF SENSITIVE / NO-GO AREA			
Objective	**The ongoing rehabilitation, maintenance and management of the identified Sensitive Area (No-Go Area) within the site boundaries.**		
Risk	**Actions**	**Monitoring**	**Targets**
Potential impact on Terrestrial Ecosystems. Potential associated impacts on the aquatic habitats. Increased risk of pollution. Increased risk of erosion.	The sensitive/ no-go area within the site is identified in **Figure 4** above. This area is important from a Terrestrial perspective and requires continued conservation. No further development related activities are to take place outside of the demarcated footprint unless duly authorised by the competent authority. The revegetation of any temporary sites, as well as any previously degraded areas, must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications in particular the remaining open space areas. Any activity associated with maintenance must not encroach on intact vegetation, especially in the No-Go area. No dumping within the no-go area shall be permitted, and no waste may be buried or burned. Ensure control of staff movements to clearly designated areas and access routes to limit disturbances. Ensure strict poaching control. No hunting, trapping, or setting of snares by personnel is to be allowed. Suitable fines/disciplinary actions for such must be made known and implemented. No domestic/feral dogs and cats must be allowed on site. Fuel-wood collection must be prohibited. The Stormwater Management Plan needs to be adhered too. Refer to **GOAL 1: STORM WATER MANAGEMENT**. Hazardous materials (chemicals, fuels, oils) should be stored appropriately to prevent contamination. Accidental spills that occur on site should be cleaned up immediately and appropriately. Care should be taken when fuel for maintenance equipment is used/stored to avoid spillage and contaminating soil. Refer to **GOAL 2: EMERGENCY PREPARDNESS AND RESPONSE MANAGEMENT**. Waste Management within the site will be undertaken in terms of **GOAL 5: WASTE MANAGEMENT & WATER EFFICIENCY.**	The condition of all sensitivity areas will be monitored annually and recommendations for any management changes or actions (alien clearing, lack of fire, etc.) that are needed will be made.	Achieve optimal ecological functioning in this areas. Sound environmental management practices should be adhered to at all times.

	Alien Clearing and VeldFire management (firebreaks, controlled burns etc.) within these areas must be undertaken in accordance with **GOAL 4: ALIEN CLEARING AND VELDFIRE MANAGEMENT**.		
Remedial Action	Non-compliance to be reported to the Applicant and the Competent Authority. Penalise individuals who deviate from the targets. The condition of no-go area will be monitored annually, and recommendations will be made for any management changes or actions (alien clearing, lack of fire, etc.) as required. If erosion has occurred, it must immediately be rehabilitated through stabilisation of the embankments and revegetation, where applicable.		
PERFORMANCE			
Date	**Details of Transgression**	**Responsible Party**	**Action Taken**

GOAL 4: ALIEN CLEARING & VELDFIRE MANAGEMENT			
Objective	**Continued Alien Clearing Management of the site with the aim of zero Alien vegetation on site.**		
Risk	**Actions**	**Monitoring**	**Targets**
Loss of biodiversity Alien Vegetation infestation Fire Risk Liability	The sensitive/ no-go area within the site is identified in Figure 4 above. These areas are important from a Terrestrial perspective and requires conservation. Ongoing Alien Clearing is required within the no-go area. An Invasive Alien Plant (IAP) Management programme follows three phases: • Phase 1 – Initial control: Drastically reducing the existing population • Phase 2 – Follow-up: Controlling seedlings, root suckers and regrowth • Phase 3 – Maintenance: Sustaining low and decreasing IAP numbers with annual control Refer to **Annexure 5: A Practical Guide to Managing Alien Invasive Plants**. Alien Clearing must be undertaken using Manual and/ or Chemical control. • Primary: Manual control through hand pulling, cutting or digging out methods (Annex 7, pg 33-34); and • Secondary: Chemical control (Annex 7, pg 36-39). NB: Important tips to remember: – Herbicide mixing and refuelling must be conducted on a spill blanket. – A spade must be on-site to deal with any accidental spillage. – Keep spill kits at hand when working with hydrocarbons. – Do not decant or mix herbicide near water. – Do not rinse herbicide equipment in water bodies. – Wear the appropriate safety clothing – Use only approved herbicides. – Follow the manufacturer's instructions. Mix herbicide according to the label. – Add dye to the spray mixture to prevent over-spraying – Keep herbicide in a demarcated area at the spraying site, out of direct sunlight.	Regeneration of alien vegetation must be monitored once all areas have been cleared, forming part of a long term alien vegetation management plan within any remaining open space areas. Ensure that no fire hazards are created by stockpiling alien vegetation.	Preservation of indigenous vegetation and zero Alien Vegetation on site.

	• Refer to Herbicide Safety (Annex 7, Pg 52-57). Cleared alien vegetation should be disposed of so that it does not re-establish on site. Follow-up should be undertaken quarterly for the first year after the initial AIP clearing, thereafter, annually, within the growing season (September – November) for at least seven (7) years. An annual assessment before mobilisation of the clearing crew should be undertaken to determine equipment and personnel requirements. After initial control operations dense re-growth may arise as new re-growth will sprout in the form of stump coppice, seedlings and root suckers. The following should therefore be applied: • Plants that are less than 1m in height must be controlled by foliar application. • Areas with dense seedlings should not be uprooted or hoed out, as these areas will result in soil disturbance and will in return promote flushes and germination of alien seedling growth. Once all AIP clearing is completed all vegetation must be disposed of at a licensed refuse facility and may not be mulched or burned on site.		
Remedial Action	Non-compliance to be reported to Applicant and the Competent Authority.		
Objective	**The prevention and management of Veldfires on and around the site.**		
Risk	**Actions**	**Monitoring**	**Targets**
Loss of biodiversity Alien Vegetation infestation Fire Risk Liability	• Ensure the safety of all individuals, including staff and tenants, firefighters, and the public. To ensure health and safety of employees, site evacuation and emergency response plans for wildfire events should be implemented. • The **Emergency Preparedness and Response Plan (Goal 2)** needs to be implemented to ensure a quick response and attendance to the matter in case of a fire or leakages. • Protect infrastructure and assets from veldfire damage. Identify infrastructure and areas on site that are vulnerable to wildfire risks and construct firebreaks. • Reduce the adverse effects of veldfires and fire suppression techniques on both physical structures and the environment.	Monitor natural vegetation for Alien Invasives. Ensure that no fire hazards are created by stockpiling alien vegetation. Contractor to ensure Fire Fighting Equipment are in place and serviced regularly.	Preservation of indigenous vegetation and zero Alien Vegetation on site. Effective implementation of VeldFire Management. Zero liability

	• Implement veldfire protection measures in an environmentally responsible and financially efficient manner. • Preserve environmental values by managing fire regimes that are suitable and necessary for conservation purposes. • Smoking shall not be permitted in areas where it is a fire hazard. Such areas shall include any fuel storage areas and areas where the vegetation or other material may promote the rapid spread of an initial flame. • A fire extinguisher of the appropriate type must be present when welding or other "hot" activities are undertaken. • Ensure backup power systems are available, should energy supply be disrupted. Refer to **Annexure 6 - What a landowner needs to know about Fire Management**.		
Remedial Action	Non-compliance to be reported to Applicant and the Competent Authority.		
PERFORMANCE			
Date	**Details of Transgression**	**Responsible Party**	**Action Taken**

GOAL 5: WASTE MANAGEMENT & WATER EFFICIENCY			
Objective	**Effective Waste Management**		
Risk	**Actions**	**Monitoring**	**Targets**
Litter Wasteful use of resources Attraction of Vermin. Pollution	The waste hierarchy is a simple ranking system used for the different waste management options according to which is the best for the environment. The most preferred option is to prevent waste, and the least preferred choice is disposal in landfill sites (**Figure**). This strategic approach promotes environmentally friendly practices, ensuring efficient resource use and reducing environmental impact.  ***Figure 3:*** *The Waste Hierarchy.* **Prevention:** The idea of avoiding things becoming waste in the first place is essential and the preferred option in the waste hierarchy. When we take action to prevent waste from arising in the first place, there is simply less waste. Less waste means less need to reuse products, less disposal, less expenses and most importantly, less waste at landfill sites. **Re-use:** If surplus materials can be used in the future site works, they are classified as re-use materials. If they are surplus to requirements and need to be removed from site and they can be removed and used in their present form, they can be removed from site for re-use. **Recycling:** If surplus materials cannot be reused in their present form but could be used in a different form, they will be sent to recycling or labelled as future recycling. Recycling plays a vital role in diverting waste from landfills and conserving resources. Recycling is the most environmentally friendly solution when it comes to disposing of waste. Today, most items we use can now be	Visual checks need to be undertaken to ensure that the waste storage containers are maintained in a condition appropriate for their use and containment of the specific waste. Skips and/or bins will need to be monitored regularly to ensure that cross contamination doesn't occur. Problems or issues of non-conformance to be identified and appropriate corrective measures to minimize environmental damage to be implemented. Annual internal compliance auditing. Waste disposal records maintained for all waste streams.	Improved methods to Reduce, Reuse and Recycle. Ongoing.

	recycled. Everyday products that we can recycle include paper, cardboard, glass, wood, metal and most plastics. **Recovery:** For waste that we can't recycle, it may be possible to recover energy in the form of "waste to energy". Waste to energy is the process of incinerating non-recyclable waste to produce electricity. This helps reduce our reliance on fossil fuels and decreases carbon emissions. Composting is also a method we use when we can't recycle materials. Composting turns organic wastes into nutrient-rich food for plants. **Landfill:** Residual waste can come in several forms including 1) Waste that cannot be disposed of due to its category, class or material (e.g. old tyres, metals and contaminated waste). Ways of reusing or disposing of the waste from the site needs to found; and 2) Unused machinery, spare parts or discarded parts. Residual waste can be an eyesore, fire hazard and has potential to impact on the environment through leachates. Residual wastes that are deemed essential or have the potential for future use will be stored in a neat and tidy manner and where possible under cover to avoid or reduce the potential for further corrosion or damage to the product. Furthermore, if the above options cannot be satisfied, then the only alternative left is to send the surplus materials to landfill. <u>An integrated waste management system must therefore be introduced that is based on waste minimisation and must include reduction, recycling, recycling, re-use and disposal where appropriate as follows:</u> • All waste generated will be required to be separated and stored in appropriate sealed containers. Waste storage areas must be under roof or waste storage containers must be covered to prevent the ingress of water and attraction of pests/ vermin. • Adequate Waste storage containers must be appropriately placed and emptied regularly. • Separate bins and skips should be provided for various waste streams. Setting up clearly labelled bins for different recyclable materials like paper, plastic, and metal should be easily identifiable and conveniently located throughout the site/buildings. Using standardised colour-coding systems and clear signage with pictograms can ensure intuitive waste segregation by staff, regardless of language barriers. • Recyclable waste should be further separated into appropriate bins or skips under categories as per **Figure 4**, as applicable, depending on the recycling company utilised.		

	• Educating staff: Clear signage and awareness campaigns can encourage proper sorting of recyclable items, reduce contamination and improve recycling efficiency. Engaging educational programs can ensure everyone understands the importance of waste segregation and contributes effectively. • Waste storage containers must be inspected for any sign of deterioration on a biannual basis. • Waste storage shall be in accordance with all best practice guidelines and under no circumstance may waste be burnt or buried on site. • General waste will be collected by the Municipality. • Partnering with recycling facilities: Establishing strong relationships with local recycling facilities ensures proper processing and responsible management of collected recyclables. Partnering with local facilities not only supports the regional recycling infrastructure but also reduces transportation distances associated with waste hauling, reducing the environmental impact of the recycling process itself. • Waste that cannot be reused or recycled must be removed by a suitably qualified contractor and disposed of at an appropriately licensed landfill site. Hazardous waste will be removed to a registered licensed facility. Proof of appropriate disposal must be provided.  ***Figure 4:*** *Colour coded storage bins and skips for the separation of solid waste.*		
Remedial Action	Non-compliance to be reported to Applicant and the Competent Authority.		

Objective	**Sustainable water management practices.**		
Risk	**Actions**	**Monitoring**	**Targets**
Water Scarcity	Implement water-saving technologies, such as rainwater harvesting and efficient irrigation systems (e.g. drip irrigation and smart irrigation controllers), to minimize water consumption and promote responsible water use. Water-efficient fixtures i.e. low-flow toilets, urinals, faucets and showerheads and appliances is a straightforward yet effective approach to water conservation. Landscaping which involves the use of drought-tolerant and indigenous plant species, can significantly reduce water demand for irrigation while also enhancing the aesthetic appeal.	Annual Compliance Auditing.	Reduced water consumption Sustainable water management practices
Remedial Action	Non-compliance to be reported to Applicant and the Competent Authority.		

PERFORMANCE			
Date	**Details of Transgression**	**Responsible Party**	**Action Taken**

5. COMPLIANCE AND MONITORING

Financing of environmental control requirements outlined in this document, as they relate to each of the development phases of the project, is the responsibility of the Applicant unless another party has been identified as the responsible party. It is the responsibility of the Applicant, and any other responsible entity, to ensure adherence to the recommendations of the EMPr, and to review the results of the monitoring reports and to facilitate any corrective action that may be necessary.

5.1 Monitoring

The monitoring of works on site is necessary to demonstrate compliance with the specifications of the EMPr and to allow for problems or issues of non- conformance to be identified and appropriate corrective measures to minimise environmental damage to be implemented. Monitoring should include visual checks by the Site Manager on a daily basis, checks on particular requirements for site activities by the ECO, as well as a review of site documentation. The ECO or a suitable person shall complete the performance record at the end of each table, as a record of transgressions or problems experienced on site and how they were dealt with.

Monitoring of activities on site by the ECO should be done as follows: An initial site visit prior to any activities will be carried out to brief the Contractor who will undertake the construction activities and a second site visit will be undertaken once the no-go areas have been demarcated and prior to the commencement construction activities. Site visits will be undertaken on a monthly basis during the construction phase.

5.2 Penalties and Incentives

Transgressions relate to actions by contractors and team members whereby damage or harm is inflicted upon the environment or any feature thereof and where any of the conditions or specifications of the EMPr are infringed upon.

In the instance of environmental damage, the damage is where possible to be repaired and rehabilitated using appropriate measures, as specified and undertaken by appropriate specialists for the account of the Applicant or other guilty party.

Where infringement of the specifications or conditions of the EMPr is registered, appropriate remedial action or measures are to be implemented for the account of the Applicant. Where non-repairable damage is inflicted upon the environment or non-compliance with any of the EMPr obligations is registered then the Contractor may face a monetary penalty to an amount specified by the ECO. The ECO reserves the right to implement a first offence warning.

Transgressions are most likely to occur with respect to litter on site, damage to trees on site, disturbance of sensitive areas. The following penalties are suggested for the above-mentioned transgressions:

- Waste: In the case of excessive waste the ECO is to allow the Contractor 24 hours in which to remove the litter or face a monetary penalty at the ECO's discretion.
- Damage of River System or conservation area: A monetary penalty to the maximum of R5000 is to be paid for each waste act within a River System or the Conservation Area.
- Erosion: Erosion resulting from any work on site is to be rectified at the cost of the Contractor.

If excessive infringement with regard to any of the specifications is registered, the Applicant reserves the right to terminate the Contractor's contract.

The above-mentioned controls are to be identified and enforced by the ECO. Issues of non-compliance noted by the ECO are to be communicated to the site manager, who holds the responsibility of ensuring that the relevant parties are made aware of the lack of compliance with EMPr specifications and that appropriate action is taken to rectify the situation. The ECO will advise on appropriate corrective actions when necessary.

5.3 Site Record

Minutes of the Contractor's meetings on site must reflect:

- environmental queries and complaints;
- actions agreed upon;
- dates of eventual compliance;
- must form part of the official environmental site record; and
- along with the Environmental Site Book and Site Diary.

In additions to the summary report, the ECO shall keep a monthly photographic record of progress on site at the start of the construction phase and an ad hoc record of incidents or events on site, especially in the case of transgressions from EMPr specifications.

5.4 Review of EMPr

The EMPr will be reviewed by the ECO on an ongoing basis. Based on observations during site inspections and issues raised at site meetings, the ECO will determine whether any procedures require modification to improve the efficiency and applicability of the EMPr on site.

Any such changes or updates will be registered in the ECO's monthly record, as well as being included as an annexure to this document. Annexures of this nature must be distributed to all relevant parties on site.

5.5 Environmental Audits

A suitably qualified Environmental Auditor is to be appointed, to undertake audits of compliance with the EMPr. An audit should be undertaken 6 months after construction activities have been commenced with and 6 months after completion of construction activities/ the operation phase has commenced. Objectives should be to audit compliances with the key components of the EMPr, to identify main areas requiring attention and recommend priority actions. The audit should cover a cross section of issues, including implementation of environmental controls, environmental management, and environmental monitoring.

During the operational phase the Applicant must conduct an annual audit to assess the state of the development in achieving the goals i.e. waste minimisation, water and energy conservation and the efficient use of resources. Internal operational audits are to be undertaken annually.

Results of the audits should inform changes required to the specifications of the EMPr, or additional specifications to deal with any environmental issues which arise on site and have not been dealt with in the current document.

ANNEXURE 1: CURRICULUM VITAE

CURRICULUM VITAE of PAUL HENDRIK SLABBERT

ENVIRONMENTAL & HERITAGE IMPACT PRACTITIONER

EAPASA Reg 2020 • Ref: 2019/1036 & APHP Professional Heritage Practitioner

1. PERSONAL DETAILS

Born:	23 May 1973
Nationality:	South African
Drivers License:	Code EB
Languages:	Proficient in English and Afrikaans

2. KEY COMPETENCIES

I've completed my BACCALAUREUS ARTIUM ET SCIENTIAE Honors degree at the Potchefstroom University for CHO in 1995. The degree is primarily focused on qualifying Town and Regional Planners, but due to the SCIENTIAE (Science) component it equipped and stimulated my passion for environmental planning. Geography & Environmental studies, Sociology, Statistics and Mathematics in the first year and Geography & Environmental studies, Sociology in the second year formed the bases of my environmental education and interest. Economics up to 3rd year level and Statistics, Project Management and Planning Legislation at 4th year level provided me with an advance understanding of the development industry. The Town and Regional Planning curriculum from 1st to 4th year covered the entire spectrum of the built, people, heritage, natural and aesthetic environment in relation to the potential impacts on the socio, economic and bio-physical environment.

I started my Environmental Assessment Practitioner (EAP) career in 1998 as a professional practicing initially in the eco-tourism development industry. My passion for environmental, heritage & land-use planning with associated management strategies enable me to facilitate with all role players to find workable solutions in order to implement sustainable development in Greenfield areas. Due to the ECA (Act No. 73 of 1989) Section 21 Activities identified in 1997/8 the projects I was involved with required authorisation ito the ECA. As a result I started to practice as an EAP obtaining authorisations for triggered developments. I gained experience in rural and urban development with the emphasis on environmental impact assessments and management. This enabled me to have various publications in leading eco-tourism magazines. I've been witness to the evolution of the EIA industry from ECA to NEMA up to the current EIA Regulations. I've been operating as a Principal EAP and Environmental Practice owner for over 20 years.

During my career to date I have accumulated experience in the following key areas:

Impact Practitioner & Environmental Planner:

- Environmental Impact Assessments [legislative & process],
- Heritage & Visual Impact Assessments [legislative & process],
- Mining; Processing & Industrial [legislative & process],

- Environmental Management [environmental control, management plans, Environmental & Social Management Systems],
- Conservation [management strategies, funding & alien vegetation],
- Power Generation [generation, distribution and powerline alignment]
- Land-Use [forward planning, feasibility study, business plan],
- Eco-tourism [trails, birding, recreation, construction, lodging],
- Community [facilitating, public participation, education],
- Water use authorisation [WULA's, GA's pollution prevention management plans and ELU's];
- Waste Management Licences [legislative & process];
- Air Emission Licences [legislative & process],
- Coastal Water Discharge Permits [legislative & process],
- Organizers [events, strategic, project management].

Business & Corporate Reasonability:

- Information on my Environmental Practice, PHS Consulting please view at www.phsconsulting.co.za
- For overview of my social and community engagement programme visit www.africanvisionfoundation.co.za

Advanced Legislative Knowledge:

Providing specialist services and managing and driving projects related to the following legislation:

- National Environmental Management Act (Act No. 107 of 1998) and 2017 Regulations;
- Environmental Conservation Act (Act No. 73 of 1989);
- National Heritage Resources Act (Act No. 25 of 1999);
- Land Use Planning Ordinance (Ordinance 15 of 1985);
- National Environmental Management: Integrated Coastal Management Act (Act No. 24 of 2008);
- National Environmental Management: Waste Act (Act No. 59 of 2008);
- National Environmental Management: Air Quality Act (Act No. 39 of 2004);

- Mineral and Petroleum Resources Development Act (Act No. 28 of 2002);
- National Water Act (Act 36 of 1998);
- National Water Services Act (Act 108 of 1997).
- National Environmental Management Act (Act No. 107 of 1998); Public Participation Guideline (10 October 2012)

3. TERTIARY EDUCATION

3.1 Honors Degree in B Art Et Scien (Planning)

Year/s of study:	1992 – 1995 (received 96/03/04)
Institution:	University of Potchefstroom (PU for CHO)
Course Modules:	Geography and Environmental Studies Industrial Sociology Town & Regional Planning Economics Mathematics Philosophy Sociology Statistics Planning Legislation
Honors Thesis:	Sustainable Development of Ikageng Township

4. REGISTRATIONS AND AFFILIATIONS

- Certified Member of the Environmental Assessment Practitioners Assocoation of South Africa – Reg 2019/1036
- Professional Certified Member of Association of Professional Heritage Practitioners (APHP)
- Professional Member of the International Association for Impact Assessment (IAIA)

5. EMPLOYMENT RECORD

4.1 Current

Designation:	Self-Employed Principal Environmental Assessment Practitioner Heritage Assessment Practitioner Environmental Planner
Period:	1998 to current
Key responsibilities:	Environmental Practice (PHS Consulting) Owner that conduct, manage and review EIA's, Basic Assessments, Coastal Water Discharge Permit, Air Quality Licenses, Waste Management Licenses, Setback Line applications,

Water Use Authorizations, General Authorizations, NEMA S24G Applications, Mining Permit and License applications. Authorisation and License compliance audits, EMP's, ECO work, Social and Labour plan compilations, Alien Eradication Management Plans, Fire Management Plans, Maintenance Management Plans, Wild Life Management Plans. Environmental feasibility planning, event organizing and Corporate Social Investment programmes.

PHS Consulting: As sole Member of the Close Corporation I currently employ two fulltime EAP's namely Amanda Fritz-Whyte and Nadine Duncan. We make use of various freelance EAP's and specialist consultants depending on the project type.

4.2 Pre PHS Consulting

Designation: Employed by OmniPlan
Period: 1997 to 1998
Key responsibilities: Planning Administration, Town Planning Applications, Constraint Analysis, Layout and Design, Community Presentations.

6. COURSE / CONFERENCE PARTICIPATION

5.1 Short courses completed

I attended various DEA&DP, APHP, IAIA, Fynbos & SANBI forum workshops, training programmes and conferences since 1999 to date.

7. LIST OF EIA PROJECTS TO DATE

Please note over the years in practice I conducted many projects and it's impossible to list them all. He is a summary of the most relevant EAP projects that illustrate my competence, knowledge and experience. **Please note that all projects listed below required the need to conduct Public and Authority Participation, the result is 25 years of consultation experience.**

Major project	Tasks	Employer/client	Responsibility
Namaqualand Casino Development **1998**	Evaluate and assess various site alternatives for the development of a casino in Namaqualand. Assess bio-physical & socio-economic environments from Garies to Vioolsdrif to Pella inland environments. Assessment of the entire coastal environment from Groenrivier mouth to Alexander bay. Presented preferred site alternative to be included in national bid for license allocations	Namaqualand District Council	Act as researcher, public participation liaison and site assessment consultant
Barolong Archaeological Eco-tourism Assessment **1999 - 2000**	Investigate the feasibility to develop eco-tourism activities amongst the Barolong Tribe kraal systems on the highlands of the North West Province. After survey and mapping, proposed a feasible site close to Hartebeesfontein (NW). Planned hiking and mountain bike trails system in terms of bio-	Hartebeesfontein Farmers Association	Site Analysis, layout development, Heritage Practitioner (HP) and environmental management and ECO work

	physical and heritage constraints. Drafted a management plan for trail system and developed the trail system and product. Launched and operated initial phase until handover to landowners.		
EIA's on 4x4 trails and overnight huts, **2000 - 2001**	Completed 3 x EIA's on 4x4 trails in the Du Toit Kloof and Hexriver mountains. Worked according to DECAS guidelines and ECA process at the time.	Private Landowners and conservancies	EAP
Anglo Gold Game Reserves – North West, Gauteng, Free State Provinces **2001**	Contracted as Environmental Management Officer for Anglo Gold mining group in Vaal Reefs. I drafted EMP's for all three of the Nature Reserves and Interpretation Centres. This was followed by ecotourism master plans to focus on sustainable use of the Reserves. I acted as ECO, for the building projects (Lodges) in the reserves and on most of the adjacent mining areas. Water Management and monitoring of water samples were part of the duties	Anglo Gold Ashanti	ECO, HP and IEM officer
Contracted by Uluntu Environments for trail planning and assessments **2002**	Status quo assessments on all trails and tracks conditions in the Rhodes Memorial, Devils Peak, Sandy Bay , Buffels Bay, Table Mountain and Cape Point areas of the Cape Peninsula National Park. Proposed rehabilitation plans, construction plans and new routes. Assess potential impact on new and disturbed areas. Construction implementation and ECO.	City of Cape Town, Cape Nature	Planning, Environmental Assessment & ECO
Kronendal Estate Residential Development – Houtbay, **2003**	Environmental Impact Assessment and EMP's	Dormacorp Pty Ltd & First Plan town and regional Planners	EAP
Community Centre site selection – Pringle Bay **2003**	Site Analyses in coastal zone, with comprehensive public participation. This was to determine a feasible site form both an environmental and community perspective	Hangklip Kleinmond Municipality	Site Assessor and Public participation Liaison
Mosaic Farm, Walkerbay Fynbos Conservancy, Stanford, Western Cape **2003 – 2005**	Project and Conservation Management contract, responsible for drafting and implementing a major, building restoration and alien clearance program. Planning and implementing the Walkerbay Fynbos Conservancy Hiking trail alignments and management plans. Responsible for assessing development footprints for overnight camps. Implementation of a fire management plan and action plan.	Hermanus Riviera Estates	Environmental Planner, HP, Implementing Agent and Assessor
Chairman Birdlife Walke Bay **2003 - 2005**	Established bird club and birding project in the Overberg and the Stanford Bird fair	Birdlife South Africa	Chairman (WB), Event Organiser and Community Liaison
Hoopjiesrivier, Free Range Chicken Farm (Farm 541 Caledon)–	Basic Assessment and EMP's	ITAKANE	EAP

Karwyderskraal, **2006** Heritage Heights (Portion 81 of the Farm 229) residential development – VanWyksdorp, **2006**	Visual Impact Assessment (VIA) and Heritage Impact Assessment (HIA)	Andre Snyman	VIA and HP
Kleinberg residential and retirement village development (erf 459) – Riviersonderend **2007**	Basic Assessment, EMP's and Landscape Planning	Jacob du Toit	EAP
Gansbaai Industrial extension (erf 210) – Gansbaai **2007**	Basic Assessment, EMP's	Overstrand Municipality	EAP
Kleinbaai harbour dredging – Gansbaai **2007**	Basic Assessment, EMP's	Overstrand Municipality	EAP & ECO
Langeberg Cheese factory (Portion 69 of Farm no.159) – Buffelsjag **2008**	Basic Assessment, EMP's	Langeberg Kaas Pty Ltd	EAP
Industrial development (erf 931)- Struisbaai **2008**	Basic Assessment, EMP's, Landscape Planning	Louis Greeff	EAP
Shopping Centre Development – Livingstone Zambia **2008**	EIA and EMP's	Shoprite Checkers	EAP
Billboard development (erf 35270) – Milnerton **2008**	Basic Assessment, EMP's	CK Outdoor Advertising Pty Ltd	EAP
Fick's Pool Restuarant – Hermanus **2008**	Basic Assessment, VIA and HIA	Overstrand Municipality	EAP. VIA & HP Practitioner
Residential Development (erf 1497) – Vermont **2009**	Basic Assessment, EMP's, Landscape Planning	CRISTATUS INV 85 CC	EAP
	Basic Assessment, EMP's	PJW Terblanche	EAP & ECO

Single Dwelling Development (erf 278) – Malgas **2009**	Scoping, EIA and EMP's	Swellendam Municipality	EAP
Petrol Filling Station (erf 1) – Swellendam **2009**	Basic Assessment, EMP's	West Point Processing Pty Ltd	EAP & ECO
Fish Processing Plant – St Helena Bay **2009**	VIA and HIA	Spirito Trade 82 Pty Ltd	VIA & HP Practitioner
Bloemendal Wine Estate – Durbanville **2009**	Environmental Management Programme Reports and Audits	Terblanche Transport	Environmental Auditor
Maandagskop and Airport Quarries – Mosselbay and George **2009**			
Matroosberg Reserve (Farm 424) Ceres **2010**	Basic Assessment & EMP's	Erfdeel Boerdery	EAP & ECO
Kleinbaai Harbour Expansion (Erf 423) - Gansbaai **2010**	Basic Assessment & EMP's	Overstrand Municipality	EAP
Retirement Village Development (Erf 5379 & 5300) – Onrusrivier **2010**	Basic Assessment, EMP's & ECO	Tweefonteine Ontwikkelings Trust	EAP & ECO
Industrial Development (Erf 2015) – Riversdale **2010**	Basic Assessment, EMP's & ECO	Hessequa Municipality	EAP & ECO
Residential Development (Erf 987) – De Kelders **2011**	Basic Assessment & EMP's	Hopefull Trust	EAP
Unlawful Vegetation Removal (Farm 237) - Elim **2011**	S 24 G & EMP	Moravian Church of Elim	EAP
Graveyard Development – Springbok, Okiep, Bergsig, Matjieskloof, Kommagas, Nababeep – Northern Cape **2011**	Basic Assessments & EMP's	Nama Khoi Local Municipality	EAP
Residential Development (Erf 8704) – Paarl **2011**	Basic Assessment & EMP's	Nevensaan Ontwikkelings	EAP

Wetland Rehabilitation – Tesselaarsdal **2011**	Basic Assessment & EMP's	Department of Agriculture and Tesselaarsdal Action Group	EAP
Mushroom Farm Development (Farm 436/27) – Botrivier **2011**	Basic Assessment & EMP's Waste Licence	Ocean Mushrooms	EAP & ECO
Blouberg Mine Development (Farm 88 & 91) – Melkbosstrand **2012**	Visual Impact Assessment	Tip Trans	Visual Assessor
Urban Expansion Residential Estate (Farm 436/5) – Botrivier **2012**	Scoping, EIA & EMP's	Crimson Properties	EAP
Cemetery Development (Erf 513 – Napier **2012**	Basic Assessment & EMP's	Cape Agulhas Municipality	EAP
Coastal Sidewalks Development (Erf 462) - Franskraal **2012**	Basic Assessment & EMP's	Overstrand Municipality	EAP
Riverside Residence Development (Farm 321) – Stanford **2012**	Basic Assessment & EMP's	Astrodome Investments	EAP
Eco- Village Development (Farm 483/2) - Caledon **2012**	Basic Assessment & EMP's	Theewaterskloof Municipality	EAP
Botrivier Windfarms – Botrivier **2013**	Appointed to oppose the development of windfarms outside regional allocated areas as part of the "Wind Rush" period. Scrutinise and evaluate Scoping & EIA Documents on behalf of opposition. Handling of Appeal.	Wildekrans Wine Estate and Botriver Community	Opposing EAP
Resort Development (Farm 213) – Bonnievale **2013**	S24 G & EMP's	De Hoek Trust	EAP
Commercial Development – Chililabombwe Zambia **2013**	EIA	Shoprite Checkers	EAP
Birding Route Development – South Africa **2013 to 2016**	Environmental Planning to establish and support birding development in all the South African Provinces	E Snell & Co Funder and BirdLife	Environmental Planner

		SA and SANPARKs Honorary Rangers	
Intensive Feed Farm Development (Farm 728/2) – Grabouw **2013**	Basic Assessment & EMP's	Babel Trading	EAP & ECO
Uilenvlei Private Nature Reserve, resort development – Uilkraalmond **2013**	Basic Assessment & EMP's	Southern Spirit Properties	Compile & Review EAP
Development of five Cemeteries - Upington **2014**	Basic Assessment & EMP's	Khara Hais Local Municipality	EAP & HP
Commercial Development – Mongu Zambia **2014**	EIA	Shoprite Checkers	EAP
Establish Hartenbos River Water Users Association – Hartenbos **2014**	Draft Constitution, verify ELU's conduct Public Consultation	Hartenbos River Water Users Association	Water Resource Consulting
Commercial Development Cabinda – Angola **2014**	EIA	Shoprite Checkers	EAP
Resort Development (Farm 633 & 273) – Swellendam **2014**	Basic Assessment & EMP's	Bakkelys Drift Properties	EAP
Natures Path Lifestyle Village - Keurboomstrand **2015**	Heritage Impact Assessment guiding the EIA process towards a more aesthetic SDP	Sharples Environmental	Heritage Impact Assessor (HP)
Hazardous Waste Assessment – Castle Mews Woodstock – **2015**	Assess hazardous waste contamination in basement of old buildings, establishing the source and report finding the competent authorities. Assist with drafting management actions to clean-up and resolve.	Castle Mews	Waste Assessor
Commercial Development Kuito – Angola **2015**	EIA	Shoprite Checkers	EAP
Residential Development (Farm 142/14) – Rheebok **2015**	Basic Assessment & EMP's	Mercedes Trust	EAP & ECO
		Shoprite Checkers	Water Assessor

Water Act and Use Interpretations for Commercial off grid Systems – Western Cape **2015**	Site Assessments, Technology Assessment, Legislation Applicability, Interpretation of the Water Act.		
Coastal Sidewalk and Trail Development – Kleinmond **2015**	Basic Assessment & EMP's	Overstrand Municipality	Review EAP
Wetland Rehabilitation Plan; Operational Environmental Management Plan and Environmental Liaison Committee – Sun Valley Mall Noordhoek – **2015**	Rehabilitation Plan, OEMP & ELC	Shoprite Checkers and City of Cape Town	EAP & ECO
Air Emissions Licence (2 Neil Hare Rd) - Atlantis **2016**	Air Emissions Assessment	Malmesbury Sterilisasie Aanleg	EAP
Kenhardt Solar Power Farms and Power Lines – Northern Cape **2016-2018**	Appointed to investiage the development of solar farms an powerline distribution lines outside regional allocated areas as part of the "Solar Rush" period. Scrutinise and evaluate Scoping & EIA Documents on behalf of opposition. Handling of Appeal.	Dagab & Rooidam Farms	Analysing EAP
Jetty Development in Protected Area (Farm 480/136) – Stillbaai **2016**	Basic Assessment & EMP's	Koringfontein Farm	Review EAP
Intensive feed Farm (Farm 226) – Hermanus **2016**	Basic Assessment & EMP's	Bapchix	Review EAP & ECO
Industrial Development (Erf 1) - Caledon **2016**	Basic Assessment & EMP's	Theewaterskloof Municipality	EAP
Abalone Farm Development (Farm 421/1) – Doringbaai **2016**	Basic Assessment & EMP's	Doring Bay Abalone	Review EAP
Stander Mine (Farm 189/83) – Wilderness **2016**	Basic Assessment & EMP's	Viadro 127	EAP & ECO

ECO Lifestyle Estate & Nature Reserve, Hoek vd Berg (Farm 572) – Hermanus **2017**	Scoping EIA & EMP's, HIA	Saddle Path Properties	Review EAP, Heritage Assessor and Water Assessor
Abalone Farm Development (Farm 108) - Jacobsbaai **2017**	Basic Assessment & EMP's	Jacobsbaai Sea Products	Compile & Review EAP & ECO
Demolition Waste Management – Cape Peninsula **2017 ongoing**	Waste Management Plans for demolition and redevelopments	Shoprite Checkers	Waste Assessor
Resort Development (406/58) – Slanghoek **2017**	Basic Assessment & EMP's	Slanghoek Resort	Review EAP & Visual Assessor
Resort Development (Farm 627/1) - Stanford **2017**	Basic Assessment & EMP's	Philipskop	Review EAP
Intensive Feed Farm (Farm 541/6) – Karwyderskraal **2017**	Basic Assessment & EMP's	Itakane Trading	Review EAP & ECO
Henkershoek Mine (Farm 628) – Albertinia **2017**	Basic Assessment & EMP's	Viadro 127	Compile & Review EAP
Heavy Minerals Prospecting (Alexcor Mining Right Area) – Alexanderbaai **2018**	Basic Assessment & EMP's	Vast Mineral Sands	EAP
Commercial Development Namibe – Angola **2018**	EIA	Shoprite Checkers	EAP
Resort Development (Farm 465) – Elgin **2018**	Basic Assessment & EMP's	On The Earth	Review EAP
Residential Development (Erf 1019) - Wilderness **2018**	Basic Assessment & EMP's	Costa	Compile & Review EAP
Residential Development (Erf 1156) – Witsand **2018**	Basic Assessment & EMP's	Westfield Trust	EAP & ECO
Van Der Stell Liquor Store – Stellenbosch **2019**	Heritage Impact Assessment	Shoprite Checkers	HP

Weir and Pipeline Development (Huiskloof River) – Botrivier **2019**	S24G & EMP's	Erin de Vigne	EAP
Crocodile Diving Facility (Erf 48) – Birkenhead **2019**	Cape Nature Permitting & EMP	Afrikanos	EAP
Abalone Farm Development (Farm 6/453) – Gouritsrivier **2019**	Basic Assessment & EMP's	Aqunion	Compile & Review EAP
Heavy Minerals Prospecting (Trans Hex Mining Right Area) – Hondelipbaai **2019**	Basic Assessment & EMP's	Saxon	EAP
Intensive Chicken Farm (Farm 487) – Caledon **2019**	Basic Assessment & EMP's	Elgin Free Range Chickens	Review EAP
Agricultural Cultivation (Farm 3/497) – Malgas **2019**	Scoping, EIA & EMP's	Eksteen Familie Trust	Review EAP
Airport Quarry (Farm 129/208) – George **2019**	Scoping, EIA & EMP's	Mercedes Trust	Compile & Review EAP
Constantia Emporium Retail Centre - **2020**	Heritage Interpretation Story & Signage	Shoprite Checkers	HP
Commercial Retail Development – City of Cape Town **2017 – 2020**	Environmental Management Plans & Environmental Control Officers various projects, Delft, Sun Valley, Constantia, Sitari, Brackenfell, Paarl, Table View and Gordons Bay.	Shoprite Checkers	EMP & ECO
Heavy Mineral Mines – Alexcor Northern Cape **2020 – 2021**	Environmental Impact Study	Deep Blue Minerals	EAP
Free Range Chicken Farms – **2020 – 2021**	Environmental Impact Assessment	Elgin Free Range Chickens	EAP
Sitari Retail Centre - **2021**	Heritage Interpretation Story & Signage	Shoprite Checkers	HP
Hoop Urban Expansion – Overberg **2022**	Environmental Impact Study Heritage and Visual Impact Study	Hoop Trust	EAP & HIA

EFRC Abattoir – **2022**	Environmental Impact Assessment	Elgin Free Range	EAP
Atlantis Air Quality - **2022**	Atmospheric Impact Assessment	Atlantis Processors	EAP
Cape Winelands Airport – City of Cape Town **2021 – 2023**	Environmental Impact Assessment	Cape Winelands Airport	EAP
West Point Processors (Fish Meal & Oil) – St Helena Bay **2019 – 2023**	Environmental & Atmospheric Impact Study	TerraSan Group	EAP
Sea Concession 2A, Heavy Mineral Mine – Port Nolloth **2023-2024**	Environmental Impact Assessment & EMP	Whale Head Minerals	EAP
Memorialisation of Hardekraaltjie Cemetery – **2024**	Heritage Assessment	University of Stellenbosch	HP
Rogland Sand Mine – Albertinia – **2024**	Basic Assessment & EMP	Terblanche Transport	EAP
Revitalization of Stellenbosch Mills Square - **2024**	Heritage Assessment	Shoprite Checkers	HP

References:

1. **Shoprite Checkers - Leon Myburgh (084 223 4788) lemyburgh@shoprite.co.za.**
2. **Cape Winelands Airport - Nick Ferguson (082 374 8769) nick@capewinelands.aero**
3. **West Point Processors - Marthin Potgieter (082 551 0217) marthin@saldanha.co.za**

CURRICULUM VITAE

JENNA MAREE THERON

ENVIRONMENTAL ASSESSMENT PRACTITIONER

EAPASA Reg no: 2022/5926

PERSONAL PROFILE

Gender: Female	Date of Birth: 4 October 1984
Nationality: South African	Languages: Proficient in English and Afrikaans

KEY COMPETANCIES

I completed my Bachelor's degree (International Studies) focusing on Political Science, History and Sociology in 2005 and my Master's degree (Cultural Tourism and Heritage Studies) at the University of Stellenbosch in 2007. My Master's degree was undertaken predominately through the Department of History and the Department of Geography & Environmental Studies. In 2008 I was accepted into the City of Cape Town's Environmental Resource Management Departments Internship Program for a 12-month period. My internship was invaluable to my career as it equipped me with the practical skills and knowledge behind environmental planning. I received a certificate of commendation for 'Outstanding contribution to the Environmental Internship Programme 2008'. I officially started my EAP career in 2009 as a professional Environmental Consultant within the Private Sector and resign from Doug Jeffery Environmental Consultants as a Senior Environmental Consultant in 2016 to pursue a freelance career as an Environmental Consultant. I have gained experience in rural and urban development with the emphasis on environmental impact assessment and management within South Africa, operating as an EAP for over 15 years.

During my career to date, I have accumulated experience in the following key areas:

- Environmental Impact Assessments [legislative & process],
- Environmental Management [environmental control, management plans, Environmental Management Systems],
- Community [facilitating, public participation];
- Waste Management Licenses [legislative & process];
- Air Emission Licenses [legislative & process],
- Coastal Water Discharge Permits [legislative & process],
- Section 34 Heritage Permits,
- Organizers [project management].

Advanced Legislative Knowledge in:

- National Environmental Management Act (Act No. 107 of 1998) and 2017 EIA Regulations;
- National Heritage Resources Act (Act No. 25 of 1999);
- Land Use Planning Ordinance (Ordinance 15 of 1985);
- National Environmental Management: Integrated Coastal Management Act (Act No. 24 of 2008);
- National Environmental Management: Waste Act (Act No. 59 of 2008);
- National Environmental Management: Air Quality Act (Act No. 39 of 2004); and
- National Water Act (Act 36 of 1998).

EDUCATION

2006-2007 Tertiary education (Cum Laude)

Stellenbosch University

Masters in Philosophy (MPhil), Cultural Tourism and Heritage Studies (2 Years)

2003-2005 Tertiary education

Stellenbosch University
Bachelor of Arts (BA), International Studies (3 Years)

EMPLOYMENT RECORD

OVER 15 YEARS EXPERIENCE IN EIA'S

Freelance Environmental Consultant (2017 - present)

Senior Environmental Assessment Practitioner

- Training and experience in applying the principles of Integrated Environmental Management (IEM), and in applying the Environmental Impact Assessment (EIA) Regulations to a number of development projects and initiatives in South Africa that trigger the National Environmental Management Act.
- Facilitation, co-ordination, management and monitoring of all aspects of the EIA process.
- Liaising with specialists and all members of the project team to ensure a full understanding of the scope of work required throughout the process;
- The compilation of reports: Applicability Applications, Constraints Analysis, Basic Assessment Reports, Scoping and Environmental Impact Assessment Reports, Damage Assessment Reports (24G Applications), Rehabilitation Plans, Audit Reports and Environmental Management Programmes;
- Liaising with interested and affected parties and facilitating the public participation process required in terms of the EIA Regulations; and
- The compilation of Section 34 Heritage Applications including the liaising with the public and heritage authorities.

Doug Jeffery Environmental Consultants (2009 - 2016)

Senior Environmental Assessment Practitioner

- Training and experience in applying the principles of Integrated Environmental Management (IEM), and in applying the Environmental Impact Assessment (EIA) Regulations to a number of development projects and initiatives in South Africa that trigger the National Environmental Management, the National Environmental Management: Waste Act etc..
- Facilitation, co-ordination, management and monitoring of all aspects of the EIA process.
- Liaising with specialists and all members of the project team to ensure a full understanding of the scope of work required throughout the process;
- The compilation of reports: Constraints Analysis, Basic Assessment Reports, Scoping and Environmental Impact Assessment Reports, and Damage Assessment Reports (24G Applications) etc.;
- Liaising with interested and affected parties and facilitating the public participation process required in terms of the EIA Regulations.

City of Cape Town: Environmental & Heritage Resource Management

Internship (2008)

- Read, assess and comment on EIA, EMP, OEMP, CEMP, and Basic Assessments as per NEMA.
- Read, assess and comment on land-use planning applications, mining applications and heritage applications.
- Process signage applications.
- Assess and prepare approvals for landscaping plans.
- Compliance monitoring.
- Undertake site visits and write reports.
- Attend meetings and take minutes.
- Liaise with ECO's.
- Filling and administrative tasks.
- Assist members of the public with general environmental, heritage and signage queries.

PROFESSIONAL AFFILIATION:

Member of IAIA (International Association for Impact Assessment)
Member of Association of Professional Heritage Practitioners – Western Cape (APHP)
Professional Member of EAPASA - EAPASA Reg no: 2022/5926

COURSE CONFERENCE PARTICIPATION:

I attended various DEA&DP & IAIA forum workshops, training programmes and conferences since 2008 to date.

PROJECT RECORD TO DATE:

COMPLETION DATE	PROJECT DESCRIPTION	TYPE	APPLICANT:	ROLE:
1 NOVEMBER 2023	THE "CARPENTERS WORKSHOP" ON ERF 18792, SOMERSET WEST	Section 34, NHRA	SHOPRITE CHECKERS (PTY) LTD	Main Author & Researcher of Heritage Statement. Assisted & reviewed by Paul Slabbert Liaised with Authorities & IA&Ps and conducted PPP
29 AUGUST 2023	THE "LOCOMOTIVE SHED" ON ERF 18792, SOMERSET WEST	Section 34, NHRA	SHOPRITE CHECKERS (PTY) LTD	
3 APRIL 2023	ERF 12257, HERMANUS (4 SEA ROAD, "THE KEEP")	Section 34, NHRA & NEMA Applicability Checklist	SERAF DEVELOPMENT 1 (PTY) LTD.	
1 AUGUST 2023	EXPANSION OF THE EXISTING SHOPRITE CHECKERS DISTRIBUTION CENTRE SITUATED ON ERF 8741 WELLS ESTATE, EASTERN CAPE PROVINCE.	AMMENDED EA	EQUITIES PROPERTY FUND LIMITED	<u>Principle EAP:</u> Main Author of all reports (reviewed by Paul Slabbert) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
End 2022	THE WEST POINT PROCESSORS FISH PROCESSING PLANT ERF 1097/3, ST HELENA BAY.	ANNUAL AUDIT REPORT	WEST POINT PROCESSORS	
AUGUST 2022	THE MATROOSBERG 4x4 TRAIL ON THE REMAINDER OF FARM 424 (CERES), PORTION 3 OF FARM 356 (CERES), FARM 355 (CERES), FARM 40 (WOCESTER) & THE REMAINDER OF FARM 57 (WOCESTER), WESTERN CAPE	EMP (OPERATIONAL PHASE)	MATROOSBERG RESERVAAT CC	
OCTOBER 2022	THE PROPOSED EXPANSION/ UPGRADING OF THREE DAMS AND ASSOCIATED INFRASTRUCTURE FOR THE PURPOSES OF ESTABLISHING ORCHARDS AS WELL AS THE CONSTRUCTION OF AN AIRSTRIP, HANGAR AND JETTY ON PORTION 4 OF FARM	BAR/EMP	FULELA TRADE AND INVEST 68 CC.	

	NO. 493 (INHOEK FARM), SWELLENDAM			
NOVEMBER 2022	THE PROPOSED REVERSE OSMOSIS (RO) PLANT AT THE WEST POINT FISH MEAL PROCESSING PLANT, ON ERF 1097, ST HELENA BAY, WESTERN CAPE	BAR/ EMP/ CWDP	WEST POINT PROCESSORS	
MAY 2022, amended AUG 23	REMOVAL OF VEGETATION ON PORTION 3 OF FARM JONKERSRUST, NO. 548, SWELLENDAM	REHAB PLAN	BLOMDAL PLASE PTY LTD	<u>Principle EAP:</u> Main Author of all reports (reviewed by Paul Slabbert) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
APRIL 2022	CAMP SITE ON PORTION 3 OF FARM MICHELS KRAAL NO. 457, SWELLENDAM	REHAB PLAN	KOESANIE TRUST	
27/07/2022	THE PROPOSED EXPANSION OF WEST POINT PROCESSORS, ON ERF 1097, ST HELENA BAY, WESTERN CAPE.	BAR/ EMP/ AEL/ CWDP	WEST POINT PROCESSORS	
End 2021	THE WEST POINT PROCESSORS FISH PROCESSING PLANT ERF 1097/3, ST HELENA BAY.	ANNUAL AUDIT REPORT	WEST POINT PROCESSORS	
NOVEMBER 2020	REMAINDER OF FARM (HOEK VAN DE BERG) NO. 572, HERMANUS: LANDING STRIP REHABILITATION PLAN	AUDIT REPORT	UVA PROPERTIES (PTY) LTD	
AUGUST 2020	THE WEST POINT PROCESSORS FISH PROCESSING PLANT ERF 1097/3, ST HELENA BAY.	CONTINGENCY PLAN	WEST POINT PROCESSORS	
End 2020	THE WEST POINT PROCESSORS FISH PROCESSING PLANT ERF 1097/3, ST HELENA BAY.	ANNUAL AUDIT REPORT	WEST POINT PROCESSORS	
25/11/2019	THE WEST POINT PROCESSORS FISH PROCESSING PLANT ERF 1097/3, ST HELENA BAY.	EXTERNAL AUDIT REPORT	WEST POINT PROCESSORS	<u>Principle EAP:</u> Independent Auditor
22/11/2019	THE PROPOSED CULTIVATION OF LAND ON PORTION 3 OF FARM MELK HOUTE BOSCH NO. 497, SWELLENDAM, WESTERN CAPE	EIA/EMP	JOHANNES EKSTEEN FAMILIETRUST	<u>Principle EAP:</u> Main Author of all reports

14/11/2019	THE UNLAWFUL CONSTRUCTION OF A PIPELINE AND A WEIR IN THE HUISKLOOF RIVER (BOTRIVIER)	24G/EMP	ERIN DE VIGNE (PTY) LTD.	(reviewed by Paul Slabbert) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
16/01/2017	THE CONSTRUCTION OF A COMMERCIAL SHOPPING CENTRE ON PORTION 6 OF FARM BARDALE NO.451 AND PORTION 6 OF FARM AMSTERDAM NO 949, BLUE DOWNS	AMENDMENT	SHOPRITE CHECKERS PROPERTIES (PTY) LTD.	
22/11/2016	THE PROPOSED CONSTRUCTION OF A JETTY, ON PORTION 136 OF FARM 480, MELKHOUTFONTEIN (RIVERSDAL).	BAR/ EMP	FARM KONINGSFONTEIN (PTY) LTD.	
22/08/2016	THE PROPOSED DEVELOPMENT OF AN ADDITIONAL RESERVOIR ON A PORTION OF PORTION 1 OF FARM NO. 888 (LA PARRISSA), PAARL (15/44)	BAR	DRAKENSTEIN MUNICIPALITY	<u>Principle EAP:</u> Main Author of all reports (reviewed by Paul Slabbert) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
20/07/2015	THE PROPOSED CONSTRUCTION OF A RESIDENTIAL DEVELOPMENT ON PORTIONS 9 AND 17 OF THE FARM NO. 681, FIRGROVE	BAR	JANIGENIX (PTY) LTD	
30/04/2015	THE PROPOSED DEMOLISHMENT OF THE EXISTING DWELLING AND THE CONSTRUCTION OF A NEW DWELLING ON ERF 46, CASTLE ROCK (14/39)	SBL	MR ROY JAMES GILES	
06/06/2016	THE PROPOSED RESIDENTIAL ESTATE ON PORTIONS 3, 9 & 14 OF FARM NO. 654, CROYDON, STELLENBOSCH	BAR	JV WILNET (PTY) LTD	
08/09/2014	THE PROPOSED FLAT SIGNAGE TO BE ERECTED ON THE FAÇADE OF BUILDINGS AND AN ENTRANCE WALL LOCATED ON PORTION 477 OF FARM NO 728 JOOSTENBERG VLAKTE 14/35	SIGNAGE APP	LOUGOT PROPERTY INVESTMENTS (PTY) LTD.	<u>Principle EAP</u> compilation & submission of application.

22/03/2016	THE UNLAWFUL CONSTRUCTION OF FACILITIES FOR THE CONCENTRATION OF ANIMALS FOR THE PURPOSE OF COMMERCIAL PRODUCTION (FEEDLOTS) ON PORTION 3 & 8 OF FARM 128 (OSDAM FARM), PIKETBERG 14/27	24G	OSDAM BOERDERY (PTY) LTD.	<u>Principle EAP:</u> Main Author of all reports (reviewed by Doug Jeffery) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
01/12/2015	THE PROPOSED RESIDENTIAL FARMING VILLAGE ON A PORTION OF FARM 1793, SIMONDIUM, PAARL (14/42)	BAR	NIEUWE SION (PTY) LTD.	
30/10/2014	THE UNLAWFUL DECOMMISSIONING OF A SERVICE STATION ON ERF 37366, OMURAMBA DRIVE, MONTAGUE GARDENS.	24G	VAIDRO 184 CC C/O JAN DE MUNCK INC.	
28/01/2015	THE PROPOSED UPGRADE OF MAIN ROAD 281 (DRAAIBERG), VILLIERSDORP (14/14).	BAR	PROVINCIAL GOVERNMENT WESTERN CAPE: DEPARTMENT OF TRANSPORT AND PUBLIC WORKS	
10/11/2015	THE PROPOSED INSTALLATION OF A PEDESTRIAN FOOTBRIDGE AND ASSOCIATED INFRASTRUCTURE OVER THE VYGEKRAAL RIVER ON ERF 32604 LOCATED BETWEEN KEWTOWN AND BRIDGETOWN	BAR	CITY OF CAPE TOWN TRANSPORT PLANNING DEPARTMENT	
11/08/15	THE UNLAWFUL EXPANSION OF TOURIST FACILITIES AND THE CONSTRUCTION OF INFRASTRUCTURE ON PORTION 26 OF FARM NO. 1041, FRANSCHHOEK 14/01.	24G	LA MOTTE WINE ESTATE (PTY) LTD.	
29/04/2014	THE PROPOSED FORMALISATION OF THE STORMWATER DRAINAGE LINE AT KM 1.6 OFF THE KLAASVOOGDS WES ROAD (DR 01368), ROBERTSON 13/35.	BAR	CAPE WINELANDS DISTRICT MUNICIPALITY	
24/01/2014	THE PROPOSED ADDITIONS TO THE EXISTING DWELLING, ERF	SBL	MR. GEORGE P	<u>Principle EAP:</u>

	5599, BETTY'S BAY		DALL	Main Author of all reports (reviewed by Doug Jeffery) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
07/01/2014	THE PROPOSED ALTERATIONS AND ADDITIONS TO THE EXISTING BUNGALOW ON ERF 490, THE RIDGE, CLIFTON.	SBL	MR.& MS. C. WIESE	
10/12/2014	THE PROPOSED CONSTRUCTION OF A WASTE RECYCLING FACILITY ON PORTION 660 OF FARM NO. 454, WIMBLEDON ESTATE, BLACKHEATH.	BAR	RE-ETHICAL ENVIRONMENTAL RE-ENGINEERING (KZN) (PTY) LTD.	
04/03/2014	THE PROPOSED DEMOLITION OF AN EXISTING DWELLING AND CONSTRUCTION OF A SINGLE RESIDENTIAL DWELLING AND ASSOCIATED INFRASTRUCTURE ON ERF 45, BANTRY BAY.	SBL	MR.S. B. UPPINK	
30/03/2016	THE PROPOSED DEVELOPMENT OF AN ADDITIONAL DWELLING ON PORTION 99 OF FARM 559 SKILPADVLEI, PRINGLE BAY 13/02	BAR	SKILPADVLEI FARM (PTY) LTD.	
14/11/2014	UNLAWFUL CONSTRUCTION OF A TRACK FOR THE TESTING AND RECREATIONAL USE OF MOTOR POWERED VEHICLES ON THE REMAINDER OF FARM 1610, FRANSCHHOEK (13/23)	24G	L'ORMARINS (PTY) LTD.	
19/03/2015	THE UNLAWFUL CONSTRUCTION OF A SLAGMENT PLANT AND A CEMENT BLENDING PLANT ON PORTION 656, 664 AND 665 OF FARM WIMBLEDON NO. 454, BLACKHEATH	24G	MR WILLIE SCHEEPERS	
10/10/2014	THE PROPOSED ESTABLISHMENT OF THE SITARI LIFESTYLE ESTATE ON ERF 1840, CROYDON IN THE HELDERBERG.	EIA/ AMENDMENT	SITARI COUNTRY ESTATE (PTY) LTD	
10/06/2014	THE UNLAWFUL COMMENCEMENT OF A LISTED ACTIVITY: THE INFILLING OF A WETLAND ON PORTION 10 OF FARM 654, CROYDON, STELLENBOSCH	24G	JV WILNET (PTY) LTD	<u>Principle EAP:</u> Main Author of all reports (reviewed by Doug Jeffery) Liaised with
28/11/2014	THE UNLAWFUL COMMENCEMENT Of A LISTED ACTIVITY: DISPOSAL Of WASTE TO LAND ON PORTION 14 OF FARM 654, CROYDON, STELLENBOSCH	24G	JV WILNET (PTY) LTD	

11/11/2014	THE PROPOSED DEMOLITION OF THE EXISTING RESIDENTIAL DWELLING AND ASSOCIATED INFRASTRUCTURE AND THE CONSTRUCTION OF A NEW RESIDENTIAL DWELLING AND ASSOCIATED INFRASTRUCTURE ON ERF 2595, GLEN BEACH, CAMPS BAY.	SBL	MR N. M. PHILLIPS	Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
03/06/2013	THE ESTABLISHMENT OF THE HERITAGE PARK RETIREMENT VILLAGE ON A PORTION OF THE FARM ONVERWACHT NO. 811 AND A PORTION OF THE FARM DIE BOS NO. 810, SOMERSET WEST (AN 231 /25/4 FARM 810 AND 811, SOMERSET WEST)	AMENDMENT	MR. S. H. EHLERS	
22/10/2012	THE PROPOSED FLAT 'LETTER' SIGN TO BE ERECTED ON THE FAÇADE OF A BUILDING LOCATED ON ERF 160462, RIEBEEK STREET, CAPE TOWN CBD.	SIGNAGE APP	ATTERBURY INVESTMENTS HOLDINGS LTD	Principle EAP compilation & submission of application.
18/01/2013	THE PROPOSED NEW SINGLE RESIDENTIAL DWELLING ON ERF 27, CASTLE ROCK, SIMON'S TOWN	BAR	MR AND MRS HUGH AND JENNIFER HERMAN	Principle EAP: Main Author of all reports (reviewed by Doug Jeffery) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
23/11/2012	THE PROPOSED UPGRADING OF THE R304 (KOELENHOF ROAD), STELLENBOSCH.	BAR	STELLENBOSCH MUNICIPALITY	
25/09/2014	THE UNLAWFUL RECONSTRUCTION AND EXPANSION OF AN IN-STREAM DAM ON PORTION 15 OF FARM NO. 1646, TWO RIVERS FARM, FRANSCHOEK	24G	TWO RIVERS FARMS AND GARDENS (PTY) LTD	
19/08/2013	THE PROPOSED UPGRADING OF THE MEDIUM VOLTAGE DISTRIBUTION NETWORK BETWEEN CLOVELL Y AND SIMONSTOWN	BAR	CITY OF CAPE TOWN: ELECTRICITY DIRECTORATE	
16/01/2013	THE PROPOSED GREEN TECHNOLOGY MANUFACTURING CLUSTER INDUSTRIAL DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE ON PORTION 4 AND PORTION 1 Of FARM 1183, ATLANTIS.	BAR	CITY OF CAPE TOWN	

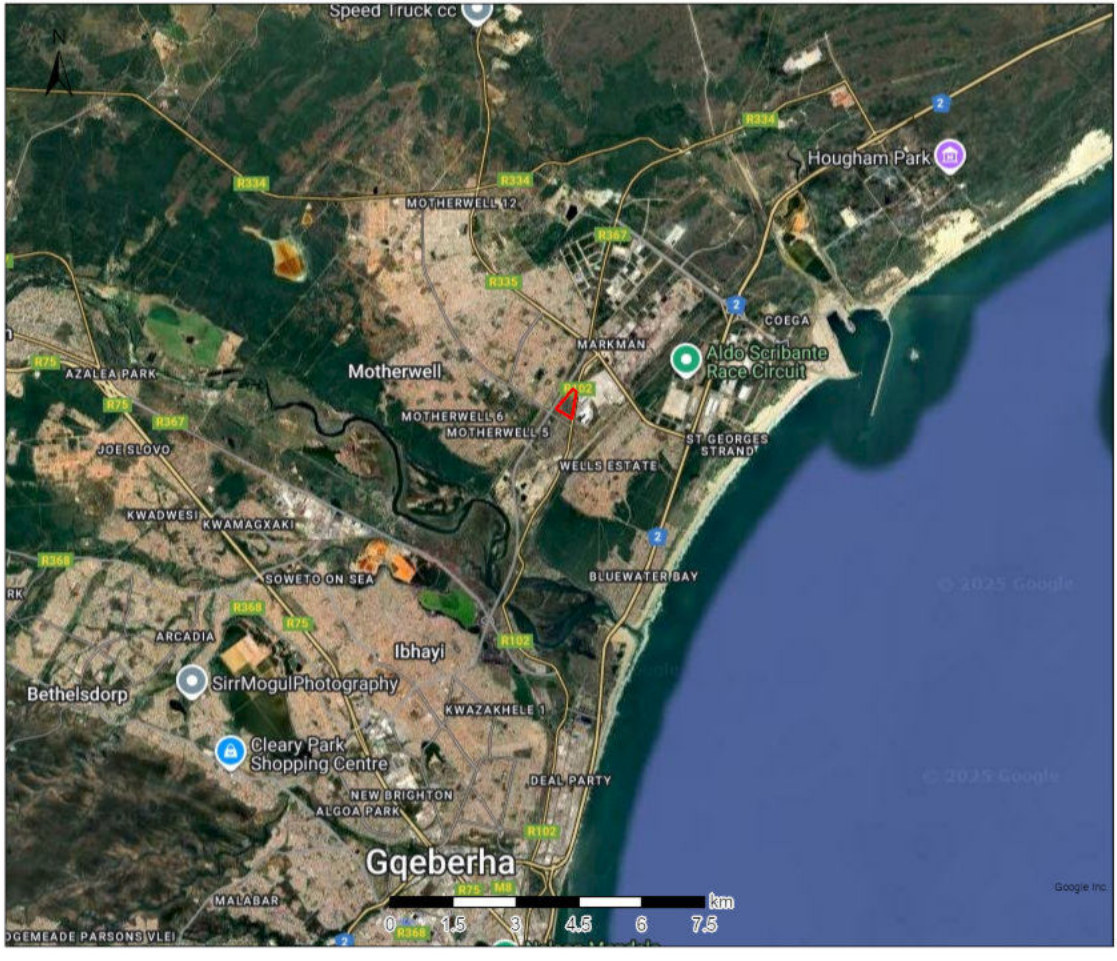
16/01/2013	THE PROPOSED GREEN TECHNOLOGY MANUFACTURING CLUSTER INDUSTRIAL DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE ON PORTION O OF FARM CA1183 AND PORTION 93 OF FARM CA4, ATLANTIS.	BAR	CITY OF CAPE TOWN	
26/09/2014	THE UNLAWFUL COMMENCEMENT OF A LISTED ACTIVITY: DREDGING OF A CHANNEL IN THE KLEIN RIVER ESTUARY, CONSTRUCTION OF A WALKWAY AND THE PROPOSED CONSTRUCTION OF A JETTYY ON PORTION 1 OF FARM NO. 723, WORTELGAT, HERMANUS	24G	HERMANUS RIVIERA ESTATES CC TRADING AS MOSAIC PRIVATE SANCTUARY	
28/05/2012	THE PROPOSED FLAT SIGN TO BE ERECTED ON THE FAÇADE OF A BUILDING LOCATED ON ERF 3316, VICTORIA STREET, SOMERSET WEST.	SIGNAGE APP	BEAV INVESTMENT HOLDINGS	<u>Principle EAP</u> compilation & submission of application.
08/02/2012	THE PROPOSED FLAT SIGN TO BE ERECTED ON THE FAÇADE OF A BUILDING LOCATED ON ERF 12715, PHILLIPI.	SIGNAGE APP	CASHBUILD	
20/02/2012	THE PROPOSED CHICKEN HOUSES ON THE REMAINDER OF FARM NO. 403, TULBAGH DIVISION AND FARM NO. 201/3, PAARL DIVISION.	NID	KLEIN VALLEI (PTY) LTD	
19/06/2012	THE THEMBOKWEZI RESIDENTIAL DEVELOPMENT ON ERF NO. 51097, KHAYELITSHA, CAPE TOWN.	AMENDMENT	OLD MUTUAL PROPERTY (PTY) LTD	<u>Principle EAP:</u> assisted by Doug Jeffery Main Author of all reports (reviewed by Doug Jeffery) Liaised with Authorities,
12/04/2011 07/03/2014	THE PROPOSED RESIDENTIAL DEVELOPMENT ON ERF 4694 (MILKWOOD RISE), KOMMETJIE.	AMENDMENT	THE KOMMETJIE ESTATES (PTY) LTD	
25/11/2014	THE PROPOSED ESTABLISHMENT OF RESIDENTIAL ERVEN ON THE REMAINDER OF FARM NO. 948, KOMMETJIE	BAR	THE KOMMETJIE ESTATES LIMITED	
12/07/2013	PROPOSED UPGRADE AND EXTENTION OF THE WELLINGTON WASTEWATER TREATMENT WORKS.	EIA	DRAKENSTEIN MUNICIPALITY	
30/03/2011	CULTIVATION OF VIRGIN SOIL ON PORTIONS 11 AND 21 OF	BAR	SPRINGFIELD	

	FARM NO. 11.2, SPRINGFIELD ESTATE, ROBERTSON		ESTATE VINEYARDS (PTY} LTD	Organs of State, Public Consultation and Specialists Conducted PPP
25/11/2010	THE PROPOSED CHANGE OF LAND USE FROM ZONED UNDETERMINED TO ESTABLISH MALIBONGWE PARK RESIDENTIAL AREA ON THE REMAINDER OF ERF 830, PELICAN PARK	AMENDMENT	THE DEPARTMENT OF HUMAN SETTLEMENTS	
01/07/2014	THE PROPOSED UPGRADE OF THE WASTEWATER TREATMENT WORKS "WWTW" AT THE 'OLOF BERGH' DISTELLERY, GOUDINI	EIA	DISTELL (PTY) LTD	
19/10/2010	THE PROPOSED FLAT SIGN TO BE ERECTED ON THE FAÇADE OF A BUILDING LOCATED ON ERF 173335, PAARDEN EILAND.	SIGNAGE APP	FRANCIS CONSULTANTS (TOWN PLANNERS)	compilation & submission of application.
29/03/2012	THE TOWNSHIP DEVELOPMENT ON ERF NO. 56719, PHENDULA CRESENT, KHAYELITHSA.	AMENDMENT	JUBELIE PROJECT MANAGEMENT (PTY) LTD	<u>Secondary EAP</u> Main Author of all reports (reviewed by Doug Jeffery) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
08/02/2013	THE PROPOSED UPGRADE OF THE VILLIERSDORP WASTE WATER TREATMENT WORKS	EIA/ WASTE LICENSE	THEEWATERSKLOOF MUNICIPALITY	
30/01/2015	THE PROPOSED DEVELOPMENT OF A RETIREMENT VILLAGE AND ASSOCIATED INFRASTRUCTURE ON THE REMAINDER OF ERF 61, SIMONS TOWN	BAR	THE ROTARY CLUB OF CAPE TOWN	
12/05/2011	THE CONSTRUCTION OF A RESIDENCE ON ERF 52, LOVERS WALK, ROOIELS	24G	MIKE LEVETT	
24/10/2016	THE UNLAWFUL COMMENCEMENT OF LISTED ACTIVITIES: UNLAWFUL COMMENCEMENT OF LISTED ACTIVITIES TO ESTABLISH AN AGRI-PARK ON PORTION 128 OF FARM 468, STELLENBOSCH	24G	OLD ABLAND (PTY) LTD	
22/06/2011	THE RECTIFICATION OF THE UNLAWFUL CONSTRUCTION OF AN AIRSTRIP ON FARM NO. 417, GROOTVLEI, TULBAGH	24G	KARWEIDERSKRAAL TRUST	

19/11/2007	PROPOSED RESIDENTIAL DEVELOPMENT ON ERF NO. 1491, HAGLEY, BLUE DOWNS	AMENDMENT	MEIPROPS 22 (PTY) LTD	
27/07/2010	THE ESTABLISHMENT OF A SERVICE TRADE AREA ON FARM GROENFONTEIN NO. 716/16, PAARL	BAR	HELU PARK (PTY) LTD	
09/06/2010	THE DEVELOPMENT OF A RETIREMENT VILLAGE ON ERF NO.1738, MONTAGU	BAR	REALTY DYNAMIX 104 (PTY) LTD	
22/08/2011	UPGRADE OF THE DWARSKERSBOS SEWERAGE TREATMENT WORKS: PORTION 4 OF THE FARM 109 DWARSKERSBOS, BERGRIVIER MUNICIPALITY	EIA	BERGRIVIER MUNICIPALITY	
20/06/2012	THE DEVELOPMENT ON MEERENDAL PORTION 1 OF FARM NO. 159, DURBANVILLE.	BAR	MEERENDAL WINE ESTATE (PTY) LTD	<u>Secondary EAP</u> Main Author of all reports (reviewed by Doug Jeffery) Liaised with Authorities, Organs of State, Public Consultation and Specialists Conducted PPP
16/03/2011	CONSTRUCTION OF A SEWERAGE PIPELINE TO SERVE DRIFTSANDS	BAR	CITY OF CAPE TOWN	
24/11/2009	THE REZONING AND SUBDIVISION OF ERF NO. 21973, KHAYELITSHA	BAR	NU-WAY HOUSING DEVELOPMENTS (PTY) LTD	
24/11/2010	DAL JOSAFAT DEVELOPMENT ON ERF NO. 16161 AND REMAINDER OF ERF NO. 17680, PAARL	EIA	ERF 16161 PAARL DEVELOPMENT (PLY} LID	
21/07/2009	THE PROPOSED USE AND/OR DISPOSAL OF SEDIMENT FROM ZEEKOEVLEI, CAPE FARM NOS. 848-0, 840-1, 847-01, 846-0, 844-31, 837-0, 838-0 AND ERF 93284, ZEEKOEVLEI NATURE RESERVE	BAR	CITY OF CAPE TOWN	

ANNEXURE 2: LOCALITY PLAN

Aerial Locality Map



Legend

Map Center: Lon: 25°36'47.4"E
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Scale: 1:144,448

Date created: 2025/16/10

Western Cape Government
FOR YOU

Aerial Locality Map

Legend

Map Center: Lon: 25°37'6.4"E
Lat: 33°49'9.5"S

Scale: 1:36,112

Date created: 2025/16/10

Western Cape Government
FOR YOU

Aerial Locality Map

Legend

Map Center: Lon: 25°36'58"E
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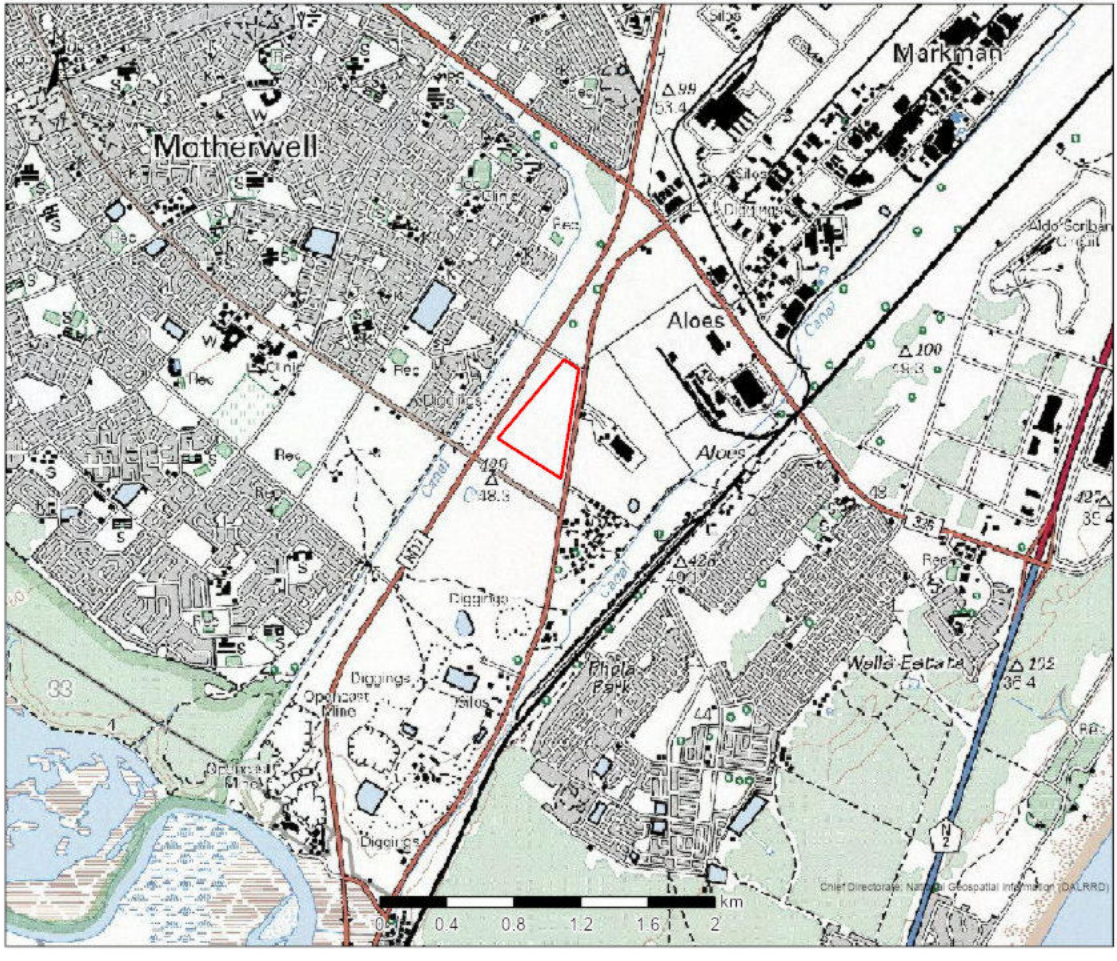
Scale: 1:9,028

Date created: 2025/16/10

Western Cape Government
FOR YOU

Topographical Locality Map



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