APPENDIX C

ENVIRONMENTAL MANAGEMENT PROGRAMME

APPLICANT: Mossel Bay Local Municipality

PROPOSED EXTENSION OF MOSSDUSTRIA AND THE ESTABLISHMENT OF A RACEWAY ON THE REMAINDER OF PORTION 8 OF THE FARM RIETVALLEY 225, MOSSEL BAY, WESTERN CAPE PROVINCE

ENVIRONMENTAL MANAGEMENT PROGRAMME

October 2026



NEMAI CONSULTING

GIBB ENVIRONMENTAL

Title and Approval Page

Project Name:	Proposed Extension of Mossdustria and the Establishment of a Raceway on the Remainder of Portion 8 of the Farm Rietvalley 225, Mossel Bay, Western Cape Province
Report Title:	Environmental Management Programme
Authority Reference:	16/3/3/2/D6/29/0001/26
Report Status:	Final

Applicant:	Mossel Bay Local Municipality

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Amendments Page

Date:	Nature of Amendment	Amendment Number:
August 2026	Draft for Review by Authorities and the Public	0
October 2026	Final for Authorities' Decision-making	1

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LIST OF ACRONYMS & ABBREVIATIONS

DEADP	Department of Environmental Affairs and Development Planning - Western Cape
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECO	Environmental Control Officer
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EO	Environmental Officer
GIBB	GIBB Environmental (Pty) Ltd
GIS	Geographical Information System
GN	Government Notice
GRDM	Garden Route District Municipality
GRM	Grievance Redress Mechanism
I&APs	Interested and Affected Parties
LMV	Light Motor Vehicle
MBLM	Mossel Bay Local Municipality
MSc	Master of Science
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Act (Act No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:PAA	National Environmental Management: Protected Areas Act (Act No. 57 of 2003)
NEM:WA	National Environmental Management: Waste Act (Act No. 59 of 2008)
NFA	National Forests Act (No. 84 of 1998)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NWA	National Water Act (Act No. 36 of 1998)
OHL	Overhead Powerline
OHS	Occupational Health and Safety
PetroSA	Petroleum Oil and Gas Corporation of South Africa
PM	Project Manager
PPE	Personal Protective Equipment
PV	Photovoltaic
SACNASP	South African Council for Natural Scientific Professions
SAHRA	South African Heritage Resources Agency
SANS	South African National Standard
SAPS	South African Police Services
SDS	Safety Data Sheets

S&EIR	Scoping and Environmental Impact Reporting
SO	Social Officer

ANNEXURES

Annexure 1 Heritage Western Cape Chance Finds Procedure
Annexure 2 Palaeontology Desktop Assessment Chance Finds Procedure
Annexure 3 Groundwater Management Plan
Annexure 4 Stormwater Management Plan

DEFINITION OF KEY TERMS

Auditing	*A systematic and objective assessment of an organisation's activities and services conducted and documented on a periodic basis.*
Construction Area	*Immediate site influenced by specific construction activities, as approved by the Engineer.*
Construction Domain	*Entire footprint required for the construction of the overall project components.*
Environment	*The surroundings in which humans exist and which comprise:* • *The land, water and atmosphere of the earth.* • *Micro-organisms, plant and animal life.* • *Any part or combination of a) and b) and the interrelationships among and between them.* • *The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that can influence human health and well-being.*
Environmental Aspect	*Those components of the company's activities, products and services that are likely to interact with the environment.*
Environmental Feature	*Elements and attributes of the biophysical, economic and social environment.*
Environmental Impact	*The change to the environment resulting from an environmental aspect, whether desirable or undesirable. An impact may be the direct or indirect consequence of an activity.*
Environmental Management Programme (EMPr)	*A detailed plan of action prepared to ensure that recommendations for enhancing positive impacts and/or limiting or preventing negative environmental impacts are implemented during the life-cycle of a project.*
Environmental Objective	*Overall environmental goal pertaining to the management of environmental features.*
Environmental Target	*Performance requirement that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.*
Monitoring	*A systematic and objective observation of an organisation's activities and services conducted and reported on regularly.*
Project Area	*The greater area within which the project is executed. Extends beyond the construction domain.*
Sensitive environmental features	*Environmental features protected by legislation (e.g. heritage resources), or identified during the EIA process as sensitive through specialists' findings and input received from Interested and Affected Parties.*
Watercourse	*A geomorphological feature characterized by the presence of a streamflow channel, a floodplain and a transitional upland fringe seasonally or permanently conveying surface water. According to the National Water Act (Act 36 of 1998), a watercourse constitutes a river or spring, a natural channel in which water flows regularly or intermittently, 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, and a reference to a watercourse includes, where relevant, its bed and banks.*

1 PURPOSE OF THE DOCUMENT

GIBB Environmental (Pty) Ltd (GIBB), now part of Nemai Consulting (Pty) Ltd, has been appointed as the independent Environmental Asessement Practitioner (EAP) by Mossel Bay Local Municipality (MBLM) (the "Applicant") to conduct the Scoping and Environmental Impact Reporting (S&EIR) process for the proposed **Extension of the Mossdustria Industrial Area, Establishment of an Alternative Energy Facility (Solar Photovoltaic (PV) Facility) and Development of a Motorsport Facility on the Remainder Portion 8 of Farm Rietvalley 225, Mossel Bay, Western Cape Province, South Africa** (the "Project").

The S&EIR process is being undertaken according to the process prescribed in the Environmental Impact Assessment (EIA) Regulations of 2014, published under Government Notice (GN) No. 982 in Gazette No. 38282 of 4 December 2014 and amended by GN No. 326 of 7 April 2017 published in Gazette No. 40772 (the "EIA Regulations"). The EIA Regulations were promulgated in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA).

This document serves as the final **Environmental Management Programme** (EMPr), which accompanies the EIA Report. An EMPr represents a detailed plan of action prepared to ensure that recommendations for enhancing positive impacts and/or limiting or preventing negative environmental impacts are implemented during the lifecycle of a project. This EMPr must be read in conjunction with the EIA Report.

The scope of the EMPr is as follows:

- To provide the legislative framework for the Project;
- To outline institutional structures and roles required to implement the EMPr;
- To provide environmental monitoring requirements;
- To establish management objectives associated with the Project's activities, in order to enhance benefits and manage (i.e. prevent, reduce, rehabilitate and/or compensate) adverse environmental impacts;
- To provide targets for management objectives in terms of desired performance; and
- To describe actions required to achieve management objectives.

2 DOCUMENT ROADMAP

As a minimum, the EMPr aims to meet the requirements specified in Appendix 4 of the EIA Regulations. **Table 1** presents the document's composition in terms of these regulatory requirements.

Table 1: Document Roadmap

Chapter	Title	Correlation with Appendix 4 of G.N. No. R982	
1	**Purpose of the Document**	N/A	
2	**Document Roadmap**	N/A	
3	**Project Overview**	N/A	
4	**Environmental Assessment Practitioner**	1(a)	Details of – (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including curriculum vitae.
5	**Legal Framework**	N/A	
6	**Method Statements**	N/A	
7	**Roles & Responsibilities**	1(i)	An indication of the persons who will be responsible for the implementation of the impact management actions.
8	**Monitoring**	1(g)	The method of monitoring the implementation of the impact management actions contemplated in paragraph (f).
		1(h)	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f).
		1(k)	The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f).
		1(l)	A programme for reporting on compliance, taking into account the requirements as prescribed by the Regulations.
9	**Environmental Training & Awareness Creation**	1(m)	An environmental awareness plan describing the manner in which - (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment.
10	**EMPr Review**	N/A	
11	**Environmental Activities, Aspects and Impacts**	1(b)	A detailed description of the aspects of the activity that are covered by the final environmental management plan.
12	**Sensitive Environmental Features**	1(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.
13	**Impact Management**	1(d)	A description of impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including – (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities.
		1(f)	A description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to - (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;

Chapter	Title	Correlation with Appendix 4 of G.N. No. R982	
			(ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable.
		1(j)	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented.
		1(l)	A programme for reporting on compliance, taking into account the requirements as prescribed by the Regulations.
14	**References**	N/A	
N/A		1(n)	Any specific information that may be required by the competent authority
N/A		2	Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply.

3 PROJECT OVERVIEW

3.1 Project Background and Motivation

The proposed Project involves expanding the existing Mossdustria industrial area and establishing a motorsport arena, a solar PV facility, and associated infrastructure in Mossel Bay. The Project is intended to support the MBLM's economic development objectives by creating additional industrial development opportunities, attracting investment, expanding economic activity, and creating employment opportunities. The development is strategically located near key regional infrastructure, including the Mossel Bay Harbour, airport, and major transport routes, thereby enhancing its potential to support future economic growth and development within the region.

The proposed development is aligned with municipal, provincial, and national planning and development objectives, including the Mossel Bay Spatial Development Framework, the National Spatial Development Framework, and the National Development Plan 2030. The Project seeks to contribute towards economic diversification, industrial expansion, tourism development, renewable energy generation, and long-term economic resilience. The motorsport arena is expected to promote tourism and associated economic opportunities, while the solar PV facility will support energy security and sustainability objectives by generating renewable energy. Overall, the Project aims to facilitate sustainable economic development, increase investment, and support job creation within the Mossel Bay municipal area.

3.2 Project Location

Mossdustria is an established industrial area situated within the urban edge of the MBLM, adjacent to and east of the Petroleum Oil and Gas Corporation of South Africa (PetroSA) refinery on the western outskirts of Mossel Bay. The proposed Project site is located directly south of the existing Mossdustria industrial area within Ward 7 of the MBLM, Garden Route District Municipality (GRDM), Western Cape Province. The site is approximately 14 km west of Mossel Bay and lies about 1 km north of the N2 National Route, providing access to key regional transport infrastructure (**Figure 1**).

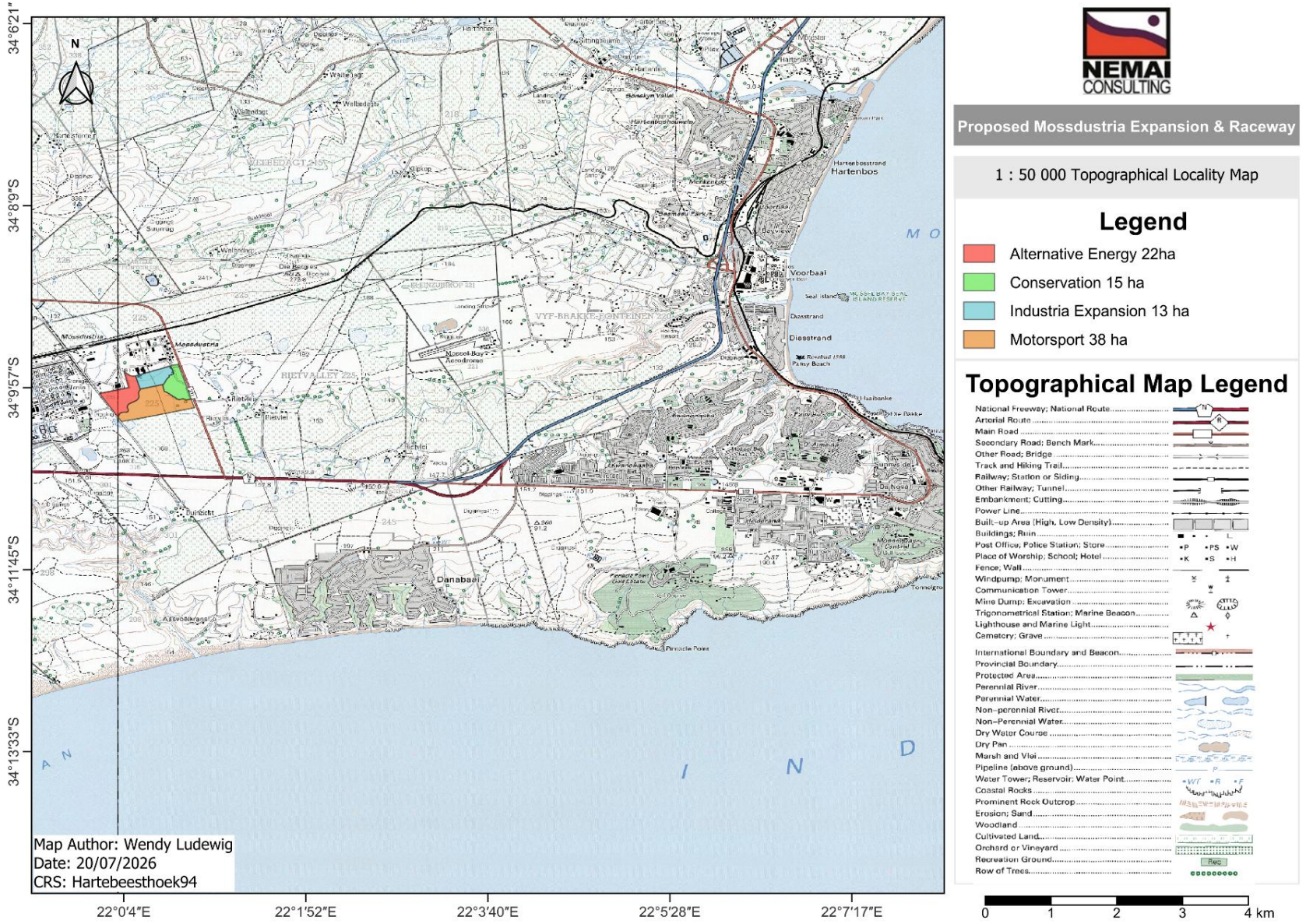


Figure 1: 1:50 000 Topographical Map for Regional Locality

3.3 Project Description

The proposed development entails extending the Mossdustria industrial area and establishing a solar PV facility and a motorsport facility on the Remainder of Portion 8 of Farm Rietvalley 225 (+/- 90 ha in extent). An existing overhead powerline (OHL) will connect the development to an existing municipal substation on Portion 6 of Farm 225 within Mossdustria. An overview of the proposed Project is summarised in **Table 2** below. The overall preliminary layout of the proposed Project is illustrated in **Figure 2**.

Table 2: Overview of Proposed Project Components

Component	Description / Dimension
Industrial expansion with associated infrastructure (+/- 12 ha)	▪ This area is currently zoned as "Agricultural Zone 1", however, it is located in the Urban Edge according to the MBLM SDF and is earmarked for Urban Expansion; ▪ The proposal is to develop 27 new industrial erven ranging from 2000 m^2 to 14000 m^2; ▪ Erven will be fully serviced, and access will be via a newly constructed public street; ▪ The developer/ owner of the erf/ erven will be responsible for installing the top structures.
Alternative Energy Production Area (+/- 22 ha)	▪ Solar PV facility with a capacity of 16 MW; ▪ Intake 16 Mega Volt Ampere (MVA) Municipal Substation; ▪ Eight (8) smaller two (2) MVA internal distribution substations; ▪ Each internal distribution substation has a step-up transformer from 400 volts to 11 000 volts; ▪ 11 kV Cables for internal reticulation; ▪ The intake municipal substation would have sixteen (16) MVA switchgear to be connected to the existing municipal grid; and ▪ Stormwater infrastructure.
Conservation area (+/- 15 ha)	▪ This area contains critically endangered Mossel Bay Shale Renosterveld; ▪ This area is currently zoned as "Agricultural Zone 1" and is located within the urban edge and area identified for future urban expansion in terms of the MBLM SDF; ▪ This section will be rezoned to "Open Space Zone III" to allow the area to be used for nature conservation; ▪ A management plan will be developed to ensure the conservation area is correctly managed
Motorsport arena (+/- 38 ha)	▪ 80 erven for workshops, covering 0.8 ha; ▪ Showrooms/ workshops (11 sites); ▪ Parking area with 1 980 bays; ▪ Parking (grass, 5Ha); ▪ Tar racetrack of 3320 m; ▪ Drag strip of 1 000 m; ▪ Spinning track of 21 000 m^2; ▪ Tar go-carting of 600 m; ▪ Gravel go-carting of 350 m; ▪ Tar pits (8 000 m^2); ▪ Gravel pits (5 000 m^2); ▪ Pavilions large – 300 m in length (2); ▪ Pavilions medium – 150 m in length (5); ▪ Pavilions small – 50 m in length (5); ▪ Ablutions – x 1 (400 m^2); ▪ Ablutions – x 7 (75 m^2); ▪ Vendor stalls/ shops (10 x 25 m^2); ▪ Fuel storage up to 5 000 litres; ▪ Gatehouse – x2 (250 m^2).

Component	Description / Dimension
Area occupied by both permanent and construction laydown areas	▪ Temporary laydown and staging area (approximately 50x50 m) in parking area. ▪ Construction camp laydown of approximately 50x50 m in parking area
Length of internal roads	▪ 25 m roads x 200 m ▪ 20 m roads x 650 m ▪ 12 m roads x 1.8 km
Width of roads	▪ 25 m roads ▪ 20 m roads ▪ 12 m roads
Water Requirements	▪ Potable water will be supplied from the MBLM water reticulation network within the Bartelsfontein Supply Zone via a connection to the existing municipal water infrastructure north of the site. ▪ The total potable water demand for the development is estimated at approximately 688.56 kL/day. ▪ The Motorsport Arena is the largest water user, with an estimated demand of 437.30 kL/day based on an annual event attendance of 5 000 people. ▪ Fire water requirements for the development have been estimated at 100 L/s for a duration of 6 hours, requiring approximately 2.16 ML of fire water storage.
Services Required	▪ Potable water will be supplied via a proposed 3.5 km long, 160 mm diameter water main connecting the development to the existing municipal water reticulation network. ▪ Wastewater generated by the development will be discharged to the existing Mossdustria municipal sewerage system and conveyed to the Mossdustria Sewer Pump Station and subsequently the Pinnacle Point Wastewater Treatment Works. ▪ Approximately 1.9 km of 160 mm diameter sewer pipeline will be required to convey wastewater from the development to the existing municipal sewer infrastructure. ▪ Stormwater generated by the development will be managed through an internal stormwater reticulation network comprising approximately 7 km of 450 mm diameter stormwater pipelines, attenuation ponds, and associated stormwater management infrastructure. ▪ A primary attenuation pond with a storage capacity of approximately 24 000 m^3 and a secondary attenuation pond with a capacity of approximately 200 m^3 will be required for stormwater management. ▪ An oil separation system will be required to treat stormwater runoff from the motorsport facilities prior to discharge to the attenuation pond system. ▪ The development will require connection to the existing road network via a new primary access from the R327 and an emergency/secondary access route via the extension of Barrier Street.

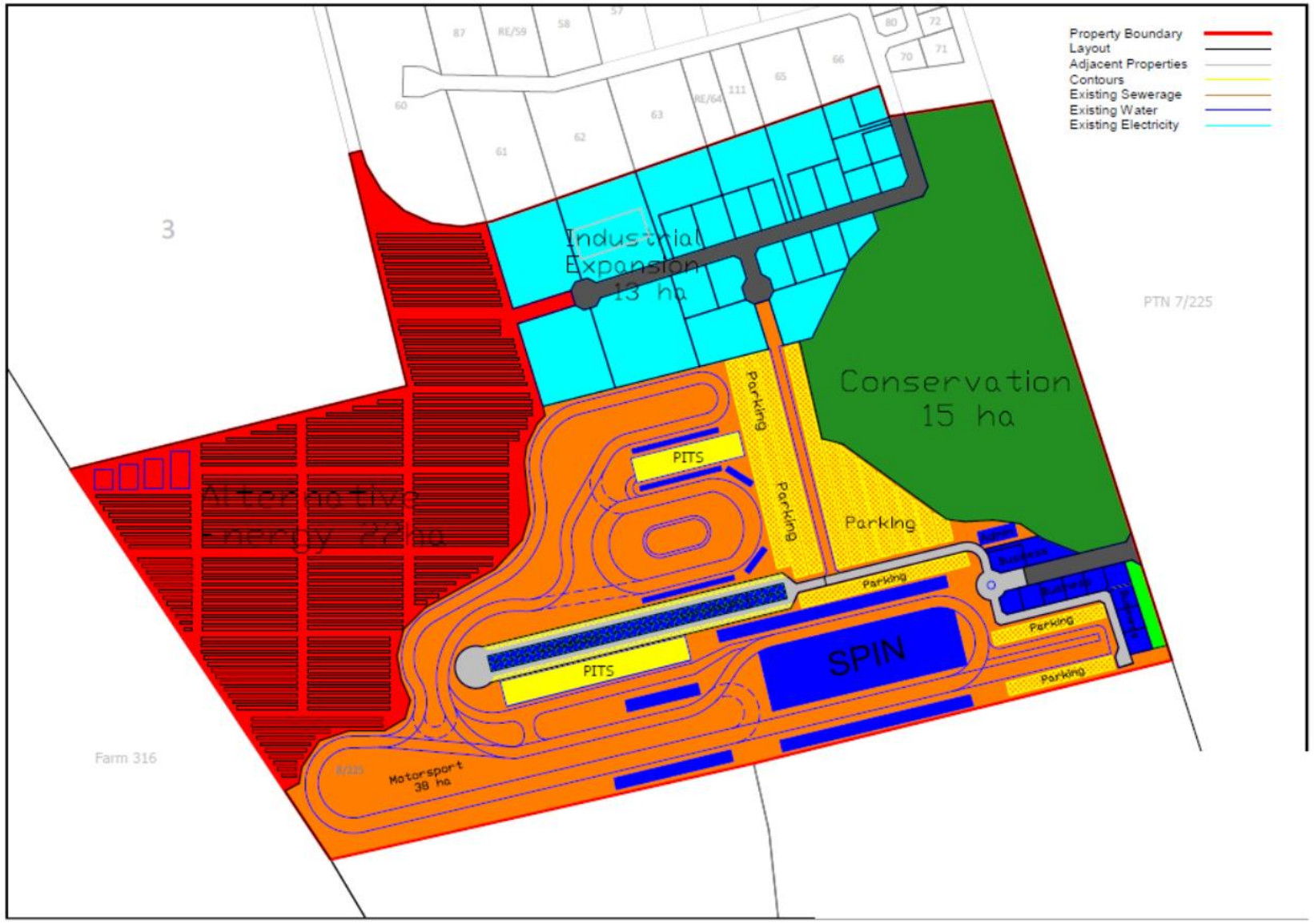


Figure 2: Preliminary layout of the proposed Project

4 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Nemai Consulting (it is noted that GIBB Environmental was acquired by Nemai Consulting) was appointed as the independent EAP to undertake the S&EIR Process for the proposed Project. In accordance with Appendix 4, Section 1(1)(a) of the EIA Regulations, this section provides an overview of Nemai Consulting and the company's experience with EIA's, as well as the details and experience of the EAP's that form part of the S&EIR Team.

Nemai Consulting is an independent, specialist environmental, social development and Occupational Health and Safety (OHS) consultancy. The company is 100% black female-owned, with a level 1 BBBEE rating. A team of experienced and capable environmental engineers, scientists, and specialists directs the company. The company has offices in Randburg (Gauteng) and Durban (KwaZulu-Natal).

The core members of Nemai Consulting involved in the S&EIR process for the Project are captured in Table 3 below. The Curriculum Vitae of the registered EAP is appended to the EIA Report.

Table 3: S&EIR Process Core Team Members

Name	Role in Project	Professional Registration	Qualifications	Selected Experience
D. Henning (25 years' experience)	Registered EAP	Environmental Assessment Practitioners Association of South Africa (EAPASA) Reg. no. 2020/1217 South African Council for Natural Scientific Professions (SACNASP) Pr.Sci.Nat Reg no: 400108/17	Master of Science (MSc) (River Ecology)	▪ Matjhabeng 400 MW Solar PV Power Plant with 80 MW (320 MWh) Battery Energy Storage Systems, Free State Province, SA. ▪ Beaufort West 75MW Solar PV Project, Western Cape, SA. ▪ Extraction of Gas and Electric Power Production Plant in the Rubavu District, Rwanda. ▪ Impompomo Hydropower Plant, Mpumalanga, SA. ▪ Hydropower Plant within Hydraulic Network at Rand Water's Zoekfontein Site, Gauteng Province, SA. ▪ uMkhomazi Water Project Phase 1 with hydropower facilities, KwaZulu-Natal, SA. ▪ Neptune-Poseidon Transmission Line, including 200km of 400 kV transmission line, Eastern Cape, SA. ▪ Makalu B (Igesi) Substation and Associated Transmission Loop-In Lines, Free State Province, SA. ▪ Anderson Dinaledi Transmission Line, including 80km of 132 kV transmission line with substations, North-West Province, SA.
W.L. Ludewig (2-3 years' experience)	Candidate EAP	EAPASA Reg. No. 2024/8548 SACNASP Candidate	MSc (Geographical Information Systems (GIS) and Remote Sensing)	▪ Proposed Damara I up to 240 MW Solar Energy Facility, up to 960 MWh Battery Energy Storage System and 33/132 kV Independent Power Producer Substation, Northern Cape, South Africa.

Name	Role in Project	Professional Registration	Qualifications	Selected Experience
		Nat. Sci. Reg. No. 169572		▪ Proposed Altina 120 MW Solar PV & 40 MW BESS, Free State Province ▪ Proposed Paradise 100MW Solar PV & 40MW BESS, Free State Province ▪ Proposed Sulphonation Plant in Wadeville, Ekurhuleni Metropolitan Municipality, Gauteng

5 LEGAL FRAMEWORK

Activities during the pre-construction, construction, and operational phases will be undertaken in accordance with recognised industry best practices and will include measures prescribed in this EMPr. The EMPr shall form part of the contract documents and inform the Contractor of their duties in fulfilling the Project's objectives, with particular reference to mitigating environmental impacts that construction activities may cause. The Contractor will note that the EMPr obligations are legally binding under environmental legislation.

All Project activities must comply with all relevant South African legislation and regulations. All environmental statutory requirements should be included in the Contractor's conditions. Some of the pertinent environmental legislation that has a bearing on the proposed Project is captured in **Table 4** below.

Table 4: Environmental legislative Framework

Legislation	Description and Relevance
Constitution of the Republic of South Africa (No. 108 of 1996)	▪ Chapter 2 – Bill of Rights. ▪ Section 24 – Environmental Rights.
National Environmental Management Act (Act No. 107 of 1998) (NEMA)	▪ Key sections (amongst others): o Section 2 – Principles. o Section 24 – Environmental Authorisation (EA) (control of activities which may have a detrimental effect on the environment). o Section 28 – Duty of care and remediation of environmental damage. ▪ Authorisation type – EA (*required for the Project*). ▪ Authorities – Department of Forestry, Fisheries and the Environment (DFFE) (national) and DEADP (competent authority for this application).
GN No. R 982 of 4 December 2014 (as amended)	▪ Purpose - regulate the procedure and criteria as contemplated in Chapter 5 of NEMA relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for EA's for the commencement of activities, subject to EIA, to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts, and for matters pertaining thereto.
GN No. R. 983 of 4 December 2014 (as amended) (Listing Notice 1)	▪ Purpose - identify activities that would require EAs before the commencement of that activity and identify competent authorities in terms of sections 24(2) and 24D of NEMA. ▪ The investigation, assessment and communication of the potential impact of activities must follow a Basic Assessment process, as prescribed in regulations 19 and 20 of GN No. R 982 of 4 December 2014 (as amended). However, according to Regulation 15(3) of GN No. R 982 (as amended), the S&EIR Process must be applied to an application if the application is for two or more activities as part of the same development for which S&EIR must already be applied in respect to any of the activities. ▪ The following activities under Listing Notice 1 are relevant to this Project:

Legislation	Description and Relevance	
	GN No. R. 983 – Activity 1 (i) (as amended): *The development of facilities or infrastructure for the generation of electricity from a renewable resource where-* *(i) the electricity output is more than 10 megawatts but less than 20 megawatts; or* *(ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare;* *excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs (a) within an urban area; or* *(b) on existing infrastructure.*	The proposed development includes a PV facility that will generate 16 MW.
	GN No. R. 983 – Activity 9 (i)(ii) (as amended): *The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water* *(i) with an internal diameter of 0.36 metres or more; or* *(ii) with a peak throughput of 120 litres per second or more;* *excluding where -* *(a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or* *(b) where such development will occur within an urban Area.*	Additional infrastructure will be required to cope with the additional water and stormwater requirements and will exceed 1000 m in length. From preliminary designs it is noted that stormwater pipes exceed 0.36 m diameter and throughput will be exceeded during storms. The site is located in the urban edge as defined by the MBLM; however, this urban edge has not been approved by DEADP.
	GN No. R. 983 – Activity 10 (as amended): *The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes –* *(i) with an internal diameter of 0,36 metres or more; or* *(ii) with a peak throughput of 120 litres per second or more;* *excluding where —* *(a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or* *(b) where such development will occur within an urban area.*	The combined length of infrastructure for bulk transportation of sewage and wastewater is estimated at 1900 m. However, it has been determined by preliminary design that the diameter and throughput will not be exceeded. The site is located in the urban edge as defined by the MBLM; however, this urban edge has not been approved by DEADP.
	GN No. R. 983 – Activity 12 (ii)(a) & (c) (as amended):	There are wetlands within the site boundary, which will be infilled to facilitate construction. The footprint of

Legislation	Description and Relevance	
	The development of— *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or* *(ii) infrastructure or structures with a physical footprint of 100 square metres or more;* *where such development occurs—* *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; —* *excluding—* *(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;* *(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;* *(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing* *Notice 3 of 2014, in which case that activity applies;* *(dd) where such development occurs within an urban area;* *(ee) where such development occurs within existing roads, road reserves or railway line reserves; or* *(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.*	infrastructure, for example, stormwater storage ponds to be constructed within 32 m of a watercourse (wetland), exceeds 100 m^2. It has been estimated during preliminary designs that the pond required for the development, excluding the Motorsport Business Development area, must have a total storage capacity of 24,000 m^3. *Noted that the wetland specialist determined that there are no natural watercourses within the Project footprint, only artificial stormwater infrastructure. A watercourse lies directly south of the Project site; therefore, development could occur within 32m of this watercourse.*
	GN No. R. 983 – Activity 14 (as amended): *The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.*	During development the storage of and handling of dangerous goods is not expected to exceed 500 cubic meters (e.g. fuel, bitumen, oils, etc.). Two areas of 15 m x 15 m next to the workshops have been identified for the storage of fuel for the race cars during operation. This will not exceed 500 cubic meters.
	GN No. R. 983 – Activity 19 (as amended): *The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;*	Natural wetlands will be infilled to facilitate construction. More than 10 m^3 of material will be infilled into the wetlands. *Noted that the wetland specialist determined that there are no natural watercourses within the Project footprint, only artificial stormwater infrastructure. A watercourse lies directly south of the*

Legislation	Description and Relevance	
	but excluding where such infilling, depositing, dredging, excavation, removal or moving - *(a) will occur behind a development setback;* *(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;* *(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;* *(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or* *(e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.*	*Project site; therefore, development could occur within 32m of this watercourse.*
	GN No. R. 983 – Activity 24 (ii) (as amended): *The development of a road -* *(i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or* *(ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;* *but excluding a road -* *(a) which is identified and included in activity 27 in Listing Notice 2 of 2014;* *(b) where the entire road falls within an urban area; or* *(c) which is 1 kilometre or shorter.*	The proposed development will include the following road specifications: Entrance road has a width of 10.2 m (3.4m x 3 lanes); 25 m roads x 200 m; 20 m roads x 650 m; and 12 m roads x 1.8 km
	GN No. R. 983 – Activity 28 (i) (as amended): *Residential, mixed, retail, commercial, industrial or institutional developments, where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:* *(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or* *(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;* *excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.*	The development will consist of a mix of retail, commercial and industrial development and will cover an area of approximately 88 ha. The land is currently zoned as Agricultural Zone 1.
	GN No. R. 983 – Activity 35 (as amended): *The expansion of residential, retail, recreational, tourism, commercial or*	The proposed footprint allocated for industrial expansion exceeds 1 ha in size.

Legislation	Description and Relevance	
	institutional developments on land previously used for mining or heavy industrial purposes, where the increased development footprint will exceed 1 000 square metres; *excluding -* *(i) where such land has been remediated in terms of part 8 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or* *(ii) where an environmental authorisation has been obtained for the decommissioning and closure of such an industry in terms of this Notice or any previous NEMA notice; or [Item (ii) substituted by GN 517 of 11 June 2021.]* *(iii) where a closure certificate has been issued in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) for such land*	
	GN No. R. 983 - Activity 45 (as amended): *The expansion of infrastructure for the bulk transportation of water or storm water, where the existing infrastructure—* *(i) has an internal diameter of 0,36 metres or more; or* *(ii) has a peak throughput of 120 litres per second or more; and* *(a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or* *(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more;* *excluding where such expansion—* *(aa) relates to transportation of water or storm water within a road reserve or railway line reserve; or* *(bb) will occur within an urban area.*	The existing Mossdustria area is fully serviced. These services will be extended to the industrial development and motorsport arena. Preliminary designs have determined that existing infrastructure will be expanded by more than 1000 m, and the throughput for stormwater will be increased by more than 10 %.
	GN No. R. 983 - Activity 46 (as amended): *The expansion of infrastructure for the bulk transportation of sewage, effluent , process water, waste water, return water, industrial discharge or slimes where the existing infrastructure—* *(i) has an internal diameter of 0,36 metres or more; or* *(ii) has a peak throughput of 120 litres per second or more; and* *(a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or*	The existing Mossdustria area is fully serviced. These services will be extended to the industrial development and motorsport arena. Existing infrastructure will be increased by more than 1000 m, and throughput will be increased by 10 %.

Legislation	Description and Relevance	
	(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more; *excluding where such expansion—* *(aa) relates to transportation of water or storm water within a road reserve or railway line reserve; or* *(bb) will occur within an urban area.*	
	GN No. R. 983 - Activity 56 (ii) (as amended): *The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre—* *(i) where the existing reserve is wider than 13,5 meters; or* *(ii) where no reserve exists, where the existing road is wider than 8 metres;* *excluding where widening or lengthening occur inside urban areas.*	The existing roads in Mossdustria will be extended to service the proposed industrial expansion. Roads are expected to be lengthened by more than 1 km. Additionally, the existing roads in Mossdustria are in excess of 8 m in width in some areas.
GN No. R. 984 of 4 December 2014 (as amended) (Listing Notice 2)	▪ Purpose - identify activities that would require EAs prior to commencement of that activity and to identify competent authorities in terms of sections 24(2) and 24D of NEMA. ▪ The investigation, assessment and communication of the potential impact of activities must follow an S&EIR Process, as prescribed in regulations 21 - 24 of GN No. R 982 of 4 December 2014 (as amended). ▪ The following activities under Listing Notice 2 are relevant to this Project:	
	GN No. R. 984 – Activity 15 (as amended): *The clearance of an area of 20 hectares or more of indigenous vegetation,* *excluding 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*	The proposed development entails the extension of the Mossdustria industrial area, establishment of a solar PV facility and a motorsport facility on the Remainder of Portion 8 of Farm Rietvalley 225 (+/- 90 ha in extent, of which +/- 70 ha will be cleared).
GN No. R. 985 of 4 December 2014 (as amended) (Listing Notice 3)	▪ Purpose - list activities and identify competent authorities under sections 24(2), 24(5) and 24D of NEMA, where EA is required prior to the commencement of that activity in specific identified geographical areas only. ▪ The investigation, assessment and communication of the potential impact of activities must follow a Basic Assessment process, as prescribed in regulations 19 and 20 of GN No. R 982 of 4 December 2014 (as amended). However, according to Regulation 15(3) of GN No. R 982 (as amended), S&EIR must be applied to an application if the application is for two or more activities as part of the same development for which S&EIR must already be applied in respect of any of the activities. ▪ The following activities under Listing Notice 3 are relevant to this Project:	
	GN No. R. 985 - Activity 1 (i). (as amended): *The development of billboards exceeding 18 square metres in size outside urban areas, mining areas or industrial complexes.* ***(i) Western Cape*** *(i) All areas outside urban areas, mining, areas or industrial complexes.*	Billboards may be used within the development for advertising purposes.
	GN No. R. 985 - Activity 4 (i)(iii). (as amended):	Roads will be constructed to provide access to various areas on the site. Roads will exceed 4 m in width.

Legislation	Description and Relevance	
	The development of a road wider than 4 metres with a reserve less than 13.5 metres. ***(i) Western Cape*** *(i) Areas zoned for use as public open space or equivalent zoning;* *(ii) Areas outside urban areas:* *(aa) Areas containing indigenous vegetation;* *(bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or* *(iii) Inside urban areas:* *(aa) Areas zoned for conservation use; or* *(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.*	
	GN No. R. 985 - Activity 10 (i)(iii). (as amended): *The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.* ***(i) Western Cape*** *(i) Areas zoned for use as public open space or equivalent zoning;* *(ii) All areas outside urban areas; or* *(iii) Inside urban areas:* *(aa) Areas seawards of the development setback line or within 200 metres from the high water mark of the sea if no such development setback line is determined;* *(bb) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; or* *(cc) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.*	Construction activities and the operation of the motor sports arena will require storage and handling of hazardous substances (e.g. fuel, bitumen, oils, etc.). The combined capacity of such facilities may exceed 30 m^3.
	GN No. R. 985 - Activity 11 (i)(iii). (as amended): *The development of tracks or routes for the testing, recreational use or outdoor racing of motor-powered vehicles excluding conversion of existing tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles.* ***(i) Western Cape*** *(i) Areas on the estuary side of the development setback line or in an*	The proposed development includes tracks for outdoor racing of motor-powered vehicles and the site contains indigenous vegetation.

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	estuarine functional zone where no such setback line has been determined; *(ii) Seawards of the development setback line or within 200 metres of the high-water mark of the sea if no such development setback line is determined; or* *(iii) Areas of indigenous vegetation outside urban areas.*	
	GN No. R. 985 Activity 12 (i) (ii). (as amended): *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan* ***(i) Western Cape*** *(i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEM:BA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;* *(ii) Within critical biodiversity areas identified in bioregional plans;* *(iii) Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;* *(iv) On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or* *(v) On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.*	The majority of the vegetation on site, with the exception of the 15 ha conservation area will be cleared to facilitate construction. Clearance of vegetation will therefore exceed 300 m^2 in extent. The proposed site is situated within the urban edge of MBLM which contains indigenous vegetation. The site is also located within a Critical Biodiversity Area, Ecological Support Area, as well as Other Natural Areas.
	GN No. R. 985 - Activity 14 (ii) (c); (i) (ff). (as amended): *The development of* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or* *(ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs* *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;*	Infrastructure in excess of 10 m^2 in size will be constructed within an artificial watercourse and within 32 m of a natural watercourse, which is located within a critical biodiversity area as identified in The Western Cape Biodiversity Spatial Plan.

Legislation	Description and Relevance	
	excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. ***(i) Western Cape*** *(i) Outside urban areas:* *(aa) A protected area identified in terms of NEMPAA, excluding conservancies;* *(bb) National Protected Area Expansion Strategy Focus areas;* *(cc) World Heritage Sites;* *(dd) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority;* *(ee) Sites or areas listed in terms of an international convention;* *(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;* *(gg) Core areas in biosphere reserves; or* *(hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.*	
	GN No. R. 985 - Activity 15 (f) (ii)(cc). (as amended): *The transformation of land bigger than 1 000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010.* ***(f) Western Cape*** *(i) Outside urban areas, or* *(ii) Inside urban areas:* *(aa) Areas zoned for conservation use or equivalent zoning, on or after 02 August 2010;* *(bb) A protected area identified in terms of NEMPAA, excluding conservancies; or* *(cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act as adopted by the competent authority.*	The site is currently zoned as Agriculture Zone 1. It would need to be rezoned to industrial. The site covers an area in excess of 1 000 m^2
	GN No. R. 985 - Activity 18 (i) (ii)(iii). (as amended): *The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.* ***(i) Western Cape*** *(i) Areas zoned for use as public open space or equivalent zoning;*	The existing roads in Mossdustria will be extended to service the proposed industrial expansion. These roads may be longer than 1 km in length. The area where the road expansion will occur contains indigenous vegetation.

Legislation	Description and Relevance	
	(ii) <u>All areas outside urban areas:</u> <u>(aa) Areas containing indigenous vegetation;</u> (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or (iii) <u>Inside urban areas:</u> (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.	
National Water Act (Act No. 36 of 1998) (NWA)	▪ Key sections (amongst others): o Chapter 3 – Protection of water resources. o Section 19 – Prevention and remedying effects of pollution. o Section 20 – Control of emergency incidents. o Chapter 4 – Water use. ▪ Authorisation type – Water Use License (WUL) / General Authorisation (GA) *(required for this Project).* ▪ Authority – Department of Water and Sanitation (DWS), Breede-Olifants Catchment Management Agency (BOCMA) (responsible authority for this Project)	
National Environmental Management Air Quality Act (Act No. 39 of 2004) (NEM:AQA)	▪ Key sections (amongst others): o Chapter 2 – National Framework and National, Provincial and Local Standards. o Chapter 4 – Air Quality Management Measures. o Chapter 5 – Licensing of Listed Activities. ▪ Authorisation type –Atmospheric Emissions License *(not required for this Project)* ▪ Authority – DFFE (national), DEADP (provincial) and municipality	
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM:BA)	▪ Management and conservation of the country's biodiversity. ▪ Protection of species and ecosystems. ▪ Authorisation type – Permit *(relevance to this Project to be confirmed).* ▪ Authority – DFFE (national) and DEADP (provincial)	
National Environmental Management: Protected Areas Act (Act No. 57 of 2003) (NEM:PAA)	▪ Protection and conservation of ecologically viable areas representative of South Africa's biological diversity and natural landscapes.	
National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA)	▪ Key sections (amongst others): o Part 2 – General duty on the holder of waste in respect of waste management. o Part 3 – Reduction, re-use, recycling and recovery of waste. o Part 4 – Regulation of waste management activities. o Part 5 – Storage, collection and transportation of waste. o Part 6 – Treatment, processing and disposal of waste. o Part 8 – Legal mechanism for managing contaminated land. ▪ Authorisation type – Waste Management Licence *(not required for this Project).* ▪ Authority - DFFE (national) and DEADP (provincial).	
National Forests Act (Act No. 84 of 1998)	• Key sections (amongst others): Chapter 3 – Special Measures to Protect Forests and Trees. ▪ Authorisation type – Permit *(relevance to this Project to be confirmed).* ▪ Authority – DFFE.	
Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)	▪ Key sections (amongst others): o Section 22 – Application for mining right. o Section 27 – Application for, issuing and duration of mining permit. o Section 53 – Use of land surface rights contrary to objects of the Act. ▪ Authorisation type – Mining Permit / Mining Right *(not required for this Project).* ▪ Authority – Department of Mineral and Petroleum Resources.	
Occupational Health & Safety Act (Act No. 85 of 1993)	▪ Provisions for Occupational Health & Safety. ▪ Authority – Department of Employment and Labour (DEL). ▪ Relevant regulations, such as Electrical Installation Regulations, Construction Regulations, etc.	
National Heritage Resources Act (Act No. 25 of 1999) (NHRA)	▪ Key sections: o Section 34 – protection of structures older than 60 years. o Section 35 – protection of heritage resources.	

Legislation	Description and Relevance
	○ Section 36 – protection of graves and burial grounds. ○ Section 38 – Heritage Impact Assessment for linear development exceeding 300m in length, development exceeding 5 000m^2 in extent, etc. ▪ Authorisation type – Permit *(not required for this Project)*. ▪ Authority – South African Heritage Resources Agency (SAHRA) (national) and Heritage Western Cape (HWC) (provincial).
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	▪ Control measures for erosion. ▪ Control measures for alien and invasive plant species. ▪ Authority – Western Cape Department of Agriculture.

Refer to **Section 5** of the EIA Report for an overview of the relationship between the proposed Project and key environmental legislation.

6 METHOD STATEMENTS

The Contractor shall provide detailed method statements outlining how the performance criteria in the EMPr will be met. These method statements are to be reviewed and approved by the Project Manager (PM) to ensure that they are adequate.

The method statements must be project- and site-specific and should explain in detail the following:

1. The manner in which the work is to be undertaken;
2. The estimated schedule for the works (timing);
3. The area where the works will be executed (location);
4. The materials and plant/equipment needed for the works;
5. The necessary mitigation measures that need to be implemented to adequately safeguard the environment, construction workers and the public (where applicable);
6. Training of employees;
7. Roles and responsibilities; and
8. Monitoring and reporting requirements.

The list of method statements required to assist in the implementation of this EMPr includes at least the following (where applicable):

- ❑ Method Statement for environmental monitoring (see **Section 8.2**);
- ❑ Method Statement for site clearing;
- ❑ Method Statement for establishing the construction camp;
- ❑ Method Statement with regard to waste and wastewater management;
- ❑ Method Statement to show procedures for dealing with possible emergencies that can occur, such as fire and accidental leaks and spillage of carbon fuels and oils;
- ❑ Method Statement for dust control;
- ❑ Method Statement for the storage and handling of hazardous substances;
- ❑ Method Statement for management of concrete and batching plants;

- Method Statement for controlling alien invasive species and noxious weeds;
- Method Statement for the decommissioning of the construction works area;
- Method Statement for rehabilitation of construction footprint; and
- Method Statement for the management of stormwater and erosion.

7 ROLES & RESPONSIBILITIES

The roles and responsibilities are outlined in the following sections. However, it is noted that if no specific person, such as an Environmental Control Officer (ECO), is appointed, the holder of the Environmental Authorisation (EA) remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

7.1 Department of Environmental Affairs and Development Planning - Western Cape

The Department of Environmental Affairs and Development Planning - Western Cape (DEADP) is the competent authority in terms of NEMA that determines whether the EA can be granted for the Project, following a decision-making process conducted as part of the S&EIR Process. Conditions are included in the EA and must be complied with by the Project Applicant.

The DEADP also fulfils a compliance and enforcement role regarding the EA. The DEADP may perform random inspections to check compliance and will also review the monitoring and auditing reports compiled by the ECO.

Amendments to the EMPr or the EA may be required based on adaptive management of site conditions, environmental auditing findings, and the project's technical requirements. The DEADP must approve amendments in accordance with the EIA Regulations.

7.2 Project Applicant

MBLM is the Applicant in terms of NEMA and is ultimately responsible for developing and implementing the EMPr and ensuring compliance with the conditions in the EA. Thus, the Applicant is liable for non-compliance.

The Applicant is further responsible for ensuring that the Project complies with all relevant environmental legislation.

Key responsibilities of the Applicant include the following:

- To be fully conversant with the conditions of the EA;
- To ensure that all stipulations within the EMPr are adhered to by the Contractor(s);

- To appoint the ECO;
- To issue site instructions to the Contractor for corrective actions required;
- To monitor the implementation of the EMPr throughout the Project;
- To ensure that periodic environmental performance audits are undertaken; and
- To comply with any other environmental legislation governing the Project's activities.

The Applicant must identify a Project Manager (PM) who is responsible for managing the Contractor(s) and ensuring that the environmental management requirements are met.

7.3 Project Manager

The PM has overall responsibility for managing the Contractor and for ensuring that the environmental management requirements are met. During the construction phase, the PM will be the Applicant's construction manager. During the operations phase, the Operations Manager is expected to fulfil this role.

The PM will be on site, and the responsibilities of this party will include the following (amongst others):

- Overseeing of all environmental matters and compliance with all environmental requirements and authorisations; and
- Act as the interface between the ECO and the other project role players.

7.4 The Environmental Control Officer

The ECO is a competent (minimum of 3 years' experience) and independent representative appointed by the Applicant. The ECO will undertake weekly site inspections and at least 6-monthly full compliance audits against the EMPr and EA. The audit reports will be submitted to the PM, and DEADP for their records, and also be made available to the relevant authorities, on their request. The ECO will check the following:

- Compliance with the EMPr as well as the EA;
- The record of environmental incidents (spills, impacts, legal transgressions, etc.) as well as corrective and preventive actions taken;
- The public complaints register in which all complaints are recorded, as well as actions taken; and
- Results from the environmental monitoring programme

7.5 The Contractor

The Contractor(s) are appointed by the Applicant to undertake the Project, as specified in the Contract. To carry out the requirements of this EMPr, the Contractor must ensure that he/she clearly understands all environmental matters relating to the Project.

The responsibilities of the Contractor will, as a minimum, include the following:

- To implement the EMPr;
- To employ a suitably qualified person to monitor and report to the Applicant's PM on the daily activities on-site during the construction period;
- To ensure all sub-contractors under his/her supervision adhere to the EMPr;
- To report any non-compliance to the PM within twelve hours of the event occurring;
- To report any non-compliance event that constitutes an emergency immediately and in line with the protocol applicable to that particular emergency event;
- To ensure that all employees and sub-contractors attend the Environmental Awareness Training and subsequent refresher training, and are familiar with or made aware of the contents of the EMPr; and
- To conduct any remedial work required in terms of the EMPr as a result of environmental negligence, mismanagement and/or non-compliance.

7.6 Contractor's Environmental Officer

The primary role of the Contractor's competent Environmental Officer (EO) is to coordinate the environmental management activities of the Contractor on site.

Specific responsibilities of the EO, who will be on site, will include the following:

- Aiding the Contractor to comply with all the project's environmental management requirements;
- Assisting the Contractor in compiling Method Statements;
- Facilitating environmental activities and environmental awareness training of relevant persons on site;
- Exercising an internal compliance management system on behalf of the Contractor;
- Inspect the site as required to ensure adherence to the management actions of the EMPr, and Method Statements, as well as the requirements of the EA;
- Provide inputs to the regular environment report to be prepared by the ECO (as required);
- Liaise with the construction team on issues related to implementation of, and compliance with the EMPr, as well as the EA; and
- Maintain a record of environmental incidents (such as spills, impacts, legal transgressions) as well as corrective and preventive actions taken.

7.7 Contractor's Social Officer

The primary role of the Contractor's competent Social Officer (SO) is to manage relations with the community and institutional stakeholders.

Specific responsibilities of the SO, who will be on site, will include the following:

- Manage the Grievance Redress Mechanism (GRM), which entails the process for publicising, receiving, evaluating, and addressing project-related grievances; and
- Provide inputs to the regular environment report to be prepared by the ECO (as required).

8 MONITORING

Monitoring is required to ensure the receiving environment is suitably safeguarded against the identified potential impacts and that the environmental management requirements are adequately implemented and adhered to during Project execution.

8.1 Baseline Monitoring

8.1.1 General

Baseline monitoring aims to determine the pre-construction state of the receiving environment and serves as a reference for measuring the Project's residual impacts by evaluating deviations from baseline conditions and the associated significance of adverse effects. The environmental parameters to be included as part of the baseline monitoring need to be confirmed in consultation with the PM and ECO, and need to take into consideration the environmental monitoring requirements listed in **Table 5** below.

8.1.2 Pre-Construction Survey

Conduct a pre-construction survey for all areas affected by construction activities. The survey needs to include the following:

- Site investigations by appropriate members of the project team and specialists (as relevant);
- Generate records from the survey, which include site details, photographs, explanatory notes, etc. (as required);
- Record the condition of existing structures and infrastructure on the site; and
- Identify site-specific mitigation measures.

Use the pre-construction survey records to establish and inform the reinstatement and rehabilitation requirements for the affected areas.

8.1.3 Environmental Parameters

Confirm the environmental parameters to be included in the baseline monitoring in consultation with the PM and ECO.

8.2 Environmental Monitoring

Environmental monitoring involves checking, at predetermined frequencies, whether thresholds and baseline values for specific environmental parameters are being exceeded. The parameters and sampling localities used during the baseline monitoring will form the basis of the environmental monitoring programme. The environmental parameters to be included in the environmental monitoring programme need to be confirmed in consultation with the PM and ECO.

The following requirements need to be incorporated into the programme:

- Monitoring during normal operations, abnormal situations and emergency situations;
- Measuring equipment must be accurately calibrated;
- Adequate quality control of the sampling must be ensured;
- Certified methods of testing must be employed;
- Where legal specifications exist for testing and sampling methods, these must be considered; and
- Establish a process to identify and implement corrective measures.

Table 5 below lists the environmental monitoring requirements for the Project.

Table 5: Environmental monitoring requirements

Theme	Monitoring Objective	Performance Indicator	Frequency	Monitoring Method	Responsibility
Construction Phase					
Vegetation and Site Clearance	Ensure clearing is limited to the approved footprint.	Cleared area matches the approved layout; no unauthorised vegetation removal.	Weekly during clearing.	Visual inspection, GPS verification, photographic record.	EO & ECO
Terrestrial Biodiversity	Ensure the demarcation and protection of the conservation area from construction activities	Promptly identify and remedy erosion, alien invasive plants, and vegetation degradation.	Weekly during construction	Visually inspect the edge of the conservation area, and implement adaptive management measures where required.	Independent Specialist, EO & ECO
Air Quality (Dust)	Limit dust generation and emissions from construction activities and hauling of material and equipment.	Visible dust < acceptable level (National Dust Control Regulations).	Weekly.	Visual inspection; use of dust fall buckets where applicable.	Independent Specialist, EO & ECO
Groundwater	Prevent pollution to and deterioration of shallow and deep groundwater.	No deterioration of water quality samples monitoring against the following parameters: ▪ Groundwater Level ▪ pH (at 25°C) ▪ Conductivity (mS/m) (at 25°C) ▪ Total Dissolved Solids (mg/L) ▪ Sodium (mg/L as Na) ▪ Potassium (mg/L as K) ▪ Magnesium (mg/L) ▪ Calcium (mg/Las Ca) ▪ Chloride (mg/L as Cl) ▪ Sulphate (mg/L as SO_4) ▪ Nitrate & Nitrite Nitrogen (mg/L as N) ▪ Nitrate Nitrogen (mg/L as N) ▪ Nitrite Nitrogen (mg/L as N) ▪ Ammonia Nitrogen (mg/L as N)	Monthly	Field Chemistry and water sampling sent for analysis at a registered laboratory	EO & ECO

Theme	Monitoring Objective	Performance Indicator	Frequency	Monitoring Method	Responsibility
		▪ Total Petroleum Hydrocarbons (TPH)			
Noise	To determine daytime residual noise levels at NSR01, NSR02, NSR05 and NSR08.	Results of the daytime residual noise levels at NSR01, NSR02, NSR05 and NSR08.	As per the requirements of the noise specialist to determine the residual noise of the environment prior to the development.	Noise level measurements should follow the SANS 10103 or similar standard (such as ISO 1996).	EO & ECO Monitoring to be conducted by a Noise specialist
Waste Management	Prevent pollution from construction and domestic waste.	▪ Waste stored in designated, labelled areas. ▪ Waste manifest/removal records. ▪ Spill response log. ▪ Cleanliness of construction site. ▪ Related entries in Public Complaints Register.	Weekly.	Site inspection and waste register.	EO & ECO
Hazardous Substances	Prevent spillage or leakage of fuels, oils, and chemicals.	• Spill containment and spill kit availability. ▪ No evidence of spills, contaminated soils or seepage to groundwater.	▪ Weekly. ▪ After refuelling. ▪ After significant spill incidents.	▪ Inspection of storage and refuelling areas. ▪ Spill and clean-up records.	EO & ECO
	Verify effectiveness of bunding and containment systems.	No evidence of leakage from oil, fuel or chemical storage facilities.	Monthly.	Inspection of bunds, storage tanks, pipelines and containment infrastructure.	EO & ECO
Stormwater and Surface Water	Monitor runoff generated during site preparation and construction to ensure that polluted runoff, sedimentation and erosion do not affect the receiving environment, particularly the watercourses to the south of the Project site.	▪ No visible evidence of polluted runoff leaving the site ▪ No excessive sedimentation, erosion, oil sheen or hydrocarbon contamination observed at discharge points or near watercourses.	Monthly visual inspections, with additional inspections during or shortly after significant rainfall events, where required.	Visual inspection of active work areas, drainage routes, discharge points, exposed soils, erosion-prone areas and areas where sedimentation may occur.	EO & ECO
	Confirm the water quality status where visual monitoring identifies areas of concern, such as increased erosion,	▪ Additional samples collected where required ▪ Review results and implement mitigation measures based on the	As required, where visual observations identify erosion, sedimentation, contamination or	Collection of water samples from the observation point or closest affected water source; laboratory analysis and interpretation of results.	ECO, EO and suitably qualified specialist, where required.

Theme	Monitoring Objective	Performance Indicator	Frequency	Monitoring Method	Responsibility
	sedimentation or suspected contamination.	scale and nature of the observed impact.	other areas of concern.		
Traffic and Access	Prevent accidents, congestion, and road degradation.	Maintain traffic flow; no major incidents.	Weekly and after complaints.	Visual inspection, log of vehicle movements.	EO, SO & ECO
Health and Safety	Ensure safety compliance on-site.	• Personal Protective Equipment (PPE) usage. ▪ Number of incidents/near-misses.	Daily toolbox talks and weekly audits.	Site observation and OHS audits.	Contractor's Safety Officer
Cultural Heritage & Palaeontological Features	Monitor occurrence of unrecorded cultural heritage and palaeontological features.	• Initiation of chance finds protocol, if required. ▪ Incident reports of damage or near-miss.	Weekly.	Site observation and field surveys by heritage specialist (if required).	Independent Specialist (if required), EO & ECO
Rehabilitation	Ensure disturbed areas outside permanent development footprint are restored successfully.	Vegetation cover and species diversity within target range.	Monthly after completion until establishment.	Visual inspection and photo records.	EO & ECO
Socio-Economic and Community Relations	Maintain transparent engagement and address grievances.	Record of complaints and responses; stakeholder satisfaction.	Continuous.	Community liaison officer reporting.	SO & ECO
Operation Phase					
Groundwater	Prevent pollution to and deterioration of shallow and deep groundwater.	No deterioration of water quality samples monitoring against the following parameters: ▪ Groundwater Level ▪ pH (at 25°C) ▪ Conductivity (mS/m) (at 25°C) ▪ Total Dissolved Solids (mg/L) ▪ Sodium (mg/L as Na) ▪ Potassium (mg/L as K) ▪ Magnesium (mg/L) ▪ Calcium (mg/Las Ca) ▪ Chloride (mg/L as Cl) ▪ Sulphate (mg/L as SO_4) ▪ Nitrate & Nitrite Nitrogen (mg/L as N) ▪ Nitrate Nitrogen (mg/L as N)	Quarterly	Field Chemistry and water sampling sent for analysis at a registered laboratory	Operations Manager / Environmental Health and Safety (EHS) Manager and suitably qualified specialist or accredited laboratory (as required).

Theme	Monitoring Objective	Performance Indicator	Frequency	Monitoring Method	Responsibility
		▪ Nitrite Nitrogen (mg/L as N) ▪ Ammonia Nitrogen (mg/L as N) ▪ Total Petroleum Hydrocarbons (TPH)			
Terrestrial Biodiversity	Successful conservation of relevant species within the Conservation Area	Baseline environmental vegetation, including protected species and species of conservation concern, thrive within the conservation area.	Monthly, or in accordance with the requirements of the Conservation Management Plan	Visual inspection and photograph records.	
Stormwater and Surface Water	Monitor the stormwater infrastructure and discharge points to identify potential operational impacts on surface water quality and stormwater performance.	No oil sheen, sediment build-up, blockages, erosion or evidence of contaminated runoff observed in drains, discharge points or the clean stormwater infrastructure including the attenuation ponds.	Monthly.	Visual inspection of drains, channels, discharge points and stormwater infrastructure.	
	Confirm runoff quality and detect any contaminants in stormwater discharged from the site to the receiving environment.	Stormwater quality remains acceptable, with no material deterioration relative to baseline or applicable water quality criteria; investigate and correct exceedances.	Quarterly.	Field sampling and laboratory analysis of stormwater at designated monitoring points.	
	Assess stormwater quality during actual discharge conditions following significant rainfall events.	Runoff generated during significant rainfall events does not show unacceptable levels of sediment, hydrocarbons, oil and grease or other contaminants.	During or shortly after significant rainfall events.	Event-based inspection and, where necessary, sampling during or immediately after rainfall events.	
	Confirm that oil separators, silt traps and other stormwater pollution control measures remain functional and effective.	Oil separators, silt traps and treatment structures are operational, free of excessive sediment or debris, and maintained as required.	Monthly or quarterly.	Operational checks and inspections of oil separators, silt traps, attenuation facilities, drainage channels and discharge structures.	
	Track key water quality indicators associated with stormwater runoff, sedimentation and potential	Results for pH, Electrical Conductivity (EC), Total Suspended Solids (TSS), oil and grease/hydrocarbons, and metals where relevant,	Quarterly.	Laboratory analysis of water samples for pH, electrical conductivity, total suspended solids, oil and grease/hydrocarbons, and metals	

Theme	Monitoring Objective	Performance Indicator	Frequency	Monitoring Method	Responsibility
	industrial/motorsports contamination.	are reviewed against baseline conditions and applicable guideline values.		where transformers or industrial equipment present a contamination risk.	
	Ensure indirect impacts on adjacent wetlands remain low.	▪ No measurable decline in wetland structure or function attributable to the Project. ▪ Adaptive management implemented where required.	Every 3 years.	Specialist assessment of wetland condition and ecological functioning.	
Waste and Wastewater	Prevent seepage, leakages, blockages, overflows and contamination associated with wastewater reticulation infrastructure and wastewater management systems.	▪ No uncontrolled wastewater spillages or leakages. ▪ Wastewater infrastructure remains fully functional and operational. ▪ No contamination of soil, groundwater, surface water or stormwater systems attributable to wastewater management failures. ▪ No justified and unresolved wastewater-related complaints.	▪ Monthly. ▪ During and after major motorsport events. ▪ After incidents, failures or complaints.	▪ Inspection of wastewater reticulation infrastructure, manholes, pipelines and associated infrastructure. ▪ Review of incident reports and complaints register. ▪ Review of maintenance and repair records. ▪ Verification of corrective actions implemented.	
	Ensure waste is appropriately stored, separated, collected and disposed of to prevent pollution, littering and environmental contamination.	▪ No unauthorised dumping, littering or burning of waste. ▪ Waste storage areas maintained in a neat and secure condition. ▪ All waste removed by authorised service providers. ▪ No contamination of soil, groundwater, surface water or stormwater systems attributable to waste management activities.	▪ Weekly. ▪ Monthly. ▪ During and after major motorsport events. ▪ As and when complaints or incidents occur.	▪ Inspection of waste storage areas and waste receptacles. ▪ Review of waste manifests, disposal certificates and collection records. ▪ Review of incident reports and complaints register. ▪ Verification of housekeeping measures and corrective actions implemented. ▪ Visual inspections supported by photographic records.	

Theme	Monitoring Objective	Performance Indicator	Frequency	Monitoring Method	Responsibility
		▪ No justified and unresolved waste-related complaints.			
Noise	No increase in noise levels exceeding recognised disturbance thresholds at surrounding receptors without implementation of additional mitigation measures	No vehicles that significantly exceed class Light Motor Vehicle (LMV) or GT3 class limits	Before vehicles enter the track	Measurements should follow the technical guidelines provided by ISO 5130, which require measuring noise levels at a 45-degree angle from the exhaust, with the microphone located 0.5m from the exhaust. The engine should run at approximately 75% power. Keep a record of the noise measurements taken.	
		Noise levels on the boundary of the motorsport venue as well as at identified receiver locations within the appropriate noise rating levels. Which are the following: ▪ Industrial area - Project area, including NSR08: o Daytime rating level of 70 dBA, o Night-time rating level of 60 dBA (not relevant, as facility will not operate after 22:00 at night), ▪ Urban area (residential use – in vicinity of workshops; business premises; and main roads) - Locations within 500m from the industrial area, the R327 and N2: o Daytime rating level of 60 dBA, o Night-time rating level of 50 dBA, ▪ Urban area (residential use) – Locations further	Quarterly noise monitoring and during major events during the first year of operation; thereafter as required, following complaints or major events.	Noise level measurements should follow the SANS 10103 or similar standard (such as ISO 1996). This typically requires measuring typical residual noise levels before the development of the motorsport arena, followed by sporadic auditing and monitoring to confirm actual noise levels during events and provide feedback to the closest NSR.	

Theme	Monitoring Objective	Performance Indicator	Frequency	Monitoring Method	Responsibility
		than 500m from the industrial area, the R327 and N2 roads, but closer than 2,000m from these noise sources: ○ Daytime rating level of 55 dBA, ○ Night-time rating level of 45 dBA.			
Traffic	Prevent significant traffic issues on the surrounding road network.	No significant traffic congestion or unsafe parking on the surrounding road network.	▪ During and after each major motorsports event. ▪ After complaints. ▪ Monthly review and reporting.	▪ Visual inspection. ▪ Log of vehicle movements during and after major events. ▪ Complaints register.	

8.3 Compliance Monitoring and Auditing

Compliance monitoring will commence in the pre-construction phase, where conditions in the EA that must be adhered to before Project implementation will be checked and recorded, as well as compliance with the provisions in the EMPr. Compliance monitoring will be completed at the end of the defects liability period to check the performance of rehabilitation measures and whether the related objectives have been met.

It is recommended that the ECO undertake weekly monitoring and compliance auditing, including an audit at the end of construction and one at the end of the defects notification period.

Auditing of compliance with the EA and EMPr must be conducted in accordance with Regulation 34 of the EIA Regulations in terms of the following:

1. The holder of the EA must, for the period during which the EA and EMPr remain valid -
    a. Ensure that compliance with the conditions of the EA and EMPr is audited; and
    b. Submit an environmental audit report to DEADP.
2. The environmental audit report must -
    a. Be prepared by an independent person with the relevant environmental auditing expertise;
    b. Provide verifiable findings, in a structured and systematic manner, on-
        i. The level of performance against and compliance of an organisation or project with the provisions of the requisite EA and EMPr; and
        ii. The ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity;
    c. Contain the information set out in Appendix 7 of the EIA Regulations; and
    d. Be conducted and submitted to DEADP at intervals as indicated in the EA.
3. The environmental audit report must determine-
    a. The ability of the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an ongoing basis and to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and
    b. The level of compliance with the provisions of the EA and EMPr.

A document-handling system must be established to ensure EMPr documents are updated accurately and that all documents required for the EMPr's effective functioning are available.

Supplementary documentation to the EMPr could include:

- Method Statements;
- Site instructions;
- Emergency preparedness and response procedures;
- Records of environmental incidents;

- Non-conformance register;
- Training records;
- Site inspection reports;
- Monitoring reports;
- Auditing reports;
- Public complaints register; and
- Grievance Mechanism/Process for public and contractor/employees.

9 ENVIRONMENTAL TRAINING & AWARENESS CREATION

Training aims to create an understanding of environmental management obligations and prescriptive measures governing the execution of the Project. It is generally geared towards project team members that require a higher level of appreciation of the environmental management context and implementation framework for the project.

Awareness creation aims to foster general attentiveness among the construction workforce to sensitive environmental features and an understanding of how to implement environmental best practices.

The various means of creating environmental awareness during the construction phase of the Project may include:

- Induction course for all workers before commencing work on site;
- Refresher courses (as and when required);
- Daily toolbox talks, focusing on particular environmental issues (task- and area specific);
- Courses must be provided by suitably qualified persons and in a language and medium understood by the workers;
- Erect signage and barricading (where necessary) at appropriate points in the construction domain, highlighting sensitive environmental features (e.g. conservation area); and
- Place posters with environmental information in areas frequented by construction workers (e.g. eating facilities).

Training and awareness creation will be tailored to the audience based on their designated roles and responsibilities. The Contractor will keep records of the type of training and awareness provided, including attendee details.

The Contractor must compile a project-specific Environmental Training and Awareness Programme, taking into account the aforementioned factors, for approval by the PM/ECO.

Training on the Operation of the Conservation Area is also required, in accordance with the Conservation Area Management Plan. This Plan must be created before construction starts and followed throughout the Project lifecycle.

10 EMPr Review

Because of its dynamic nature, this EMPr will be reviewed and revised as needed to ensure continued environmental improvement.

Following detailed design and planning, the EMPr may need to be revised to render the management actions more explicit and accurate to the final project specifications. Changes to the EMPr shall also be required where the existing system:

- Does not make adequate provision for protecting the environment against the Project's activities;
- Needs to be modified to meet the conditions of statutory approval;
- It is not achieving acceptable environmental performance;
- Requires changes due to the outcome of a monitoring or auditing event or management review;
- Provides redundant, impracticable or ineffective management measures; and
- Based on provisions in Regulation 34 of the EIA Regulations.

The EMPr will be amended in terms of Regulations 34–37 of the EIA Regulations, as applicable.

11 Environmental Activities, Aspects and Impacts

11.1 Introduction

In order to establish best management practices and prescribe mitigation measures, the following project-related information needs to be adequately understood:

- **Activities** associated with the proposed Project;
- **Environmental aspects** associated with the project activities;
- **Environmental impacts** resulting from the environmental aspects; and
- The nature of the surrounding **receiving environment**.

11.2 Project Activities

In order to understand the impacts related to the Project, it is necessary to unpack the activities associated with the project phases, as listed in **Table 6** below.

Table 6: Simplified list of activities associated with the Project

Project Phase: Pre-construction
Project Activities
Detailed engineering design, including road and stormwater infrastructure detailed designs

Detailed geotechnical investigations
Topographical and as-built infrastructure surveys
Procurement process for Contractor
Review Contractor's method statements (as relevant)
The building of a site office and ablution facilities
Confirmation of the location and condition of all structures and infrastructure on the Project site
Determining and documenting the conditions of the roads to be used during construction
Delineation and pegging of infrastructure footprints, servitudes and access routes
Site establishment planning and demarcation of contractor laydown areas, material storage areas and site access points
Establishment of survey control points and setting out of infrastructure.
High Level Environmental Activities
Appointment of an Environmental Control Officer (ECO).
Environmental induction and awareness training for contractors and site personnel
Diligent compliance monitoring of the EMPr, Environmental Authorisation and other relevant environmental legislation
Pre-construction photographic condition surveys of environmentally sensitive features and adjacent infrastructure
Demarcation of construction footprints, no-go areas and environmentally sensitive areas
Demarcation and establishment of Conservation Area, including creation of Management Plan for the Conservation Area
Other activities as per EMPr for Pre-Construction Phase
Project Phase: Construction
Project Activities
Site establishment including construction camps, temporary offices, ablutions, laydown areas and material storage areas.
Prepare access roads
Establish construction laydown area
Construction employment
Site clearing (as necessary)
Earthworks, Excavation, levelling and shaping of development platforms
Concrete Works
Mechanical and Electrical Works
Electrical supply
Construction of the industrial expansion area and associated municipal services.
Construction of the motorsport arena and associated infrastructure, including tracks, workshops, showrooms, parking areas, pavilions, ablution facilities and gatehouses.
Construction of the solar PV facility and associated electrical infrastructure.
Construction and upgrading of access roads, internal roads, intersections, traffic circles and parking areas.
Construction of stormwater infrastructure, including pipelines, attenuation ponds and oil separation systems.
Construction of sewer reticulation infrastructure and connection to the existing municipal sewer network.
Construction of potable water reticulation infrastructure and associated bulk water connections.
Installation of electrical reticulation and grid connection infrastructure.
Transportation, storage and handling of construction materials, fuel, equipment and personnel.
Waste generation, storage, handling and disposal associated with construction activities.
Stockpiling
High Level Environmental Activities
Diligent compliance monitoring of the EMPr, Environmental Authorisation, and other relevant environmental legislation
Monitoring of construction activities by the ECO
Dust, erosion, stormwater and pollution management
Management of waste, hazardous substances and wastewater.
Rehabilitation of disturbed areas not required for permanent infrastructure.
Management of construction traffic and access routes.
Monitoring of impacts on sensitive environmental features and adjacent land uses.
Implement Environmental Management Plan for the Conservation Area
Other activities as per EMPr for Construction Phase
Project Phase: Operation
Project Activities

Controlling vegetation
Operation of the industrial expansion area and associated industrial activities.
Operation of the motorsport arena, including motorsport events, workshops, showrooms, spectator facilities and parking areas.
Operation of the solar PV facility and associated electrical infrastructure.
Operation and maintenance of roads, parking areas and access infrastructure.
Operation and maintenance of potable water, sewer and stormwater infrastructure.
Operation of attenuation ponds, stormwater management systems and oil separation infrastructure.
Water use, wastewater generation and municipal service consumption by the various development components.
Operation of public facilities, ablutions, commercial activities and tourism-related facilities.
Vehicle access, traffic circulation, parking and spectator movement associated with normal operations and events.
Routine maintenance of infrastructure, buildings, services and landscaped areas.
High Level Environmental Activities
Diligent compliance monitoring of the EMPr, Environmental Authorisation, and other relevant environmental legislation
Implement Environmental Management Plan for the Conservation Area to ensure the conservation area is conserved appropriately
Maintenance and inspection of stormwater, sewer and water infrastructure.
Monitoring and management of pollution risks, including hydrocarbons associated with motorsport activities.
Waste management and housekeeping.
Monitoring of rehabilitation areas and conservation areas.
Ongoing environmental compliance auditing and reporting.
Other activities as per EMPr for Operational Phase

11.3 Environmental Aspects

Environmental aspects are components of an organisation's activities, products, and services that are likely to interact with the environment and cause an impact. **Table 7** below provides the environmental aspects identified for the proposed Project, linked to the project activities (note that only high-level aspects are provided).

Table 7: Environmental aspects associated with the Project phases

Project Phase	Environmental Aspects
Pre-Construction Phase	▪ Inadequate consultation with relevant stakeholders ▪ Inadequate environmental and compliance monitoring ▪ Poor construction site planning and layout ▪ Site-specific environmental issues not fully understood ▪ Land occupancy by temporary buildings, provisional on-site facilities and storage areas ▪ Poor waste management ▪ Absence of ablution facilities ▪ Traffic and transport associated with specialist investigations, surveying and site preparation activities ▪ Noise generation from survey, testing and investigation activities
Construction Phase	▪ Inadequate environmental and compliance monitoring ▪ Lack of environmental awareness creation ▪ Indiscriminate site clearing ▪ Poor site establishment ▪ Poor management of access and use of access roads ▪ Disruptions to traffic ▪ Air emissions and dust generation from construction activities and vehicle movement ▪ Noise and vibration associated with construction machinery and equipment ▪ Poor transportation practices ▪ Increased traffic and transportation of labour, materials and equipment.

Project Phase	Environmental Aspects
	▪ Poor fencing arrangements ▪ Disturbance, compaction and erosion of soils ▪ Excavation, earthworks and alteration of surface topography ▪ Disruptions to existing services ▪ Disturbance of remaining topsoil ▪ Poor management of excavations ▪ Inadequate storage and handling of material ▪ Inadequate storage and handling of hazardous material ▪ Poor maintenance of equipment and plant ▪ Poor management of labour force ▪ Pollution from ablution facilities ▪ Inadequate management of construction camp ▪ Poor waste management practices – hazardous and general solid, liquid ▪ Wastage of water ▪ Poor management of pollution generation potential ▪ Damage to significant flora ▪ Damage to significant fauna ▪ Inadequate stormwater management ▪ Consumption of water, fuel and construction materials. ▪ Increased traffic and transportation of labour, materials and equipment. ▪ Visual intrusion associated with construction activities and temporary infrastructure. ▪ Damage to cultural heritage and palaeontological features (if encountered) ▪ Poor reinstatement and rehabilitation ▪ Failure to comply with mitigation measures specified in the EMPr
Operational Phase	▪ Inadequate environmental and compliance monitoring ▪ Inadequate management of access, routine maintenance and maintenance works ▪ Inadequate management of invasive alien plants ▪ Inadequate stormwater management ▪ Operation of industrial activities ▪ Operation of the motorsport arena and associated tourism and recreational facilities ▪ Operation of the solar PV facility and associated electrical infrastructure ▪ Increased traffic volumes, vehicle movement and parking activities ▪ Generation of operational noise from motorsport, industrial and associated activities ▪ Atmospheric emissions and dust associated with vehicle movements and racing activities ▪ Stormwater generation and management from developed surfaces ▪ Generation and management of wastewater ▪ Water consumption and utilisation of municipal services ▪ Storage and handling of fuels and hazardous substances ▪ Risk of accidental spills and contamination of soil, surface water and groundwater ▪ Generation and management of general and hazardous waste ▪ Maintenance of infrastructure and landscaped areas ▪ Operation and maintenance of stormwater attenuation ponds and oil separation infrastructure ▪ Failure to comply with health, safety and environmental specifications ▪ Failure to comply with Conservation Area Management Plan, EA and other relevant environmental legislation ▪ Failure to comply with required monitoring measures

11.4 Potentially Significant Environmental Impacts

Environmental impacts are the change to the environment resulting from an environmental aspect, whether desirable or undesirable. **Table 8** below lists the potentially significant environmental

impacts associated with the Project. These impacts were identified using a conservative approach, representing possible adverse effects before implementing any mitigation measures. These potential impacts were assessed through specialist studies and considered by the engineering team, and appropriate mitigation measures are proposed in the EIA Report and EMPr.

Table 8: Potentially significant environmental issues

Environmental Factor	Construction Phase Potential Issues / Impacts	Operational Phase Potential Issues / Impacts
Land Use	▪ Temporary disruption of existing land uses due to construction activities. ▪ Loss of grazing land and previously cultivated land within the construction footprint. ▪ Temporary restriction of access to portions of the site during construction. ▪ Disturbance of existing open space and natural areas during site clearing and earthworks.	▪ Permanent conversion of grazing, agricultural and open space land to industrial, motorsport and alternative energy land uses. ▪ Permanent alteration of existing land use patterns within the site. ▪ Reduction in land available for agricultural and grazing activities. ▪ Increased industrialisation of the area and change in local land use character. ▪ Increased demand for supporting infrastructure and services associated with the expanded development footprint.
Geology and Geohydrology	▪ Deterioration of groundwater quality resulting from accidental spills or leaks of fuels, hydrocarbons, chemicals or other contaminants. ▪ Interception or alteration of shallow groundwater flow through excavation and construction of below-ground infrastructure. ▪ Disturbance of natural recharge and drainage processes through vegetation clearing, earthworks and soil compaction.	▪ Continued risk of groundwater contamination from fuels, hydrocarbons, chemicals and other hazardous substances associated with industrial and motorsport activities. ▪ Localised alteration of shallow groundwater flow in areas occupied by permanent infrastructure. ▪ Reduced groundwater recharge within areas affected by permanent surface hardening and infrastructure development.
Topography	▪ The site will be flattened and levelled to create a stable surface for the Project and its associated infrastructure, which will change the existing topography of the Project site. ▪ Erosion may occur in areas cleared for construction purposes.	▪ The development of the Project will alter the drainage on the site and cause an increase in the runoff.
Soil	▪ Disturbance and removal of topsoil during site clearing, excavation and earthworks. ▪ Soil compaction resulting from the movement of construction vehicles, machinery and equipment. ▪ Increased susceptibility of exposed soils to erosion and degradation. ▪ Mixing, loss or deterioration of soil horizons through construction activities. ▪ Localised soil contamination from accidental spills of fuels, oils, chemicals and other hazardous substances. ▪ Permanent loss of soil resources beneath buildings, roads and associated infrastructure	▪ Permanent sealing and loss of soil resources beneath operational infrastructure. ▪ Reduced soil functionality within developed portions of the site. ▪ Soil contamination resulting from hydrocarbon spills, fuel storage, vehicle maintenance activities and hazardous substances associated with industrial and motorsport activities. ▪ Continued soil degradation in areas affected by accidental spills or inappropriate waste management practices.

Environmental Factor	Construction Phase Potential Issues / Impacts	Operational Phase Potential Issues / Impacts
Surface Water	▪ Increased erosion of exposed soils and disturbed areas resulting from vegetation clearing and earthworks. ▪ Increased sedimentation of downstream drainage features and aquatic habitats due to sediment-laden runoff from construction areas. ▪ Deterioration of surface water quality due to sediment transport and uncontrolled stormwater runoff. ▪ Pollution of surface water resources through accidental spills or leakages of fuels, oils, cement, chemicals, wastewater, and other hazardous substances associated with construction activities.	▪ Alteration of existing surface water runoff patterns due to the establishment of hard surfaces, roads, buildings and associated infrastructure. ▪ Increased stormwater runoff volumes and flow velocities resulting from reduced infiltration across developed areas. ▪ Increased erosion and sediment transport associated with concentrated stormwater discharges. ▪ Deterioration of downstream water quality due to contaminated stormwater runoff. ▪ Pollution of surface water resources through hydrocarbons, oils and other contaminants associated with the industrial and motorsport activities. ▪ Potential indirect impacts on downstream aquatic ecosystems resulting from altered hydrological processes and reduced water quality.
Terrestrial Biodiversity (Including flora, fauna and avifauna)	▪ Loss of natural terrestrial vegetation through site clearing and earthworks. ▪ Loss or disturbance of habitats associated with Critically Endangered vegetation, CBAs, and ESAs. ▪ Loss or disturbance of plant SCCs, protected plant species, and sensitive renosterveld, fynbos and thicket habitats. ▪ Direct disturbance, displacement, injury, or mortality of fauna during vegetation clearing and construction activities. ▪ Reduction in available habitat for fauna through vegetation removal. ▪ Habitat fragmentation caused by construction-related disturbance and the creation of developed areas. ▪ Increased risk of alien invasive plant establishment in disturbed areas. ▪ Secondary disturbance outside the approved construction footprint.	▪ Permanent loss of terrestrial habitat within developed portions of the site. ▪ Long-term reduction in the extent of natural vegetation and ecological habitat. ▪ Ongoing habitat fragmentation and reduced ecological connectivity between remaining habitat patches. ▪ Continued degradation of terrestrial habitat through alien invasive plant encroachment if not actively managed. ▪ Long-term impacts on plant SCC and protected plant species through habitat loss. ▪ Reduced habitat availability for fauna associated with renosterveld, fynbos and thicket habitats. ▪ Increased faunal disturbance associated with ongoing human activity, traffic, noise and operational activities.
Socio-Economic Environment	▪ Positive Impacts – Direct employment creation. – Indirect and induced employment opportunities. – Increased household income and spending. – Skills development and transfer. – Increased expenditure within the local economy. – Support for local businesses and suppliers. ▪ Negative Impacts – Construction-related noise, dust and disturbance.	▪ Positive Impacts – Sustained employment opportunities. – Long-term economic growth and investment. – Increased tourism expenditure associated with the motorsport arena. – Growth of local businesses and enterprise development. – Increased municipal revenues and economic activity. – Improved energy resilience through the solar PV facility.

Environmental Factor	Construction Phase Potential Issues / Impacts	Operational Phase Potential Issues / Impacts
	– Increased traffic volumes and road safety risks. – Increased pressure on local infrastructure and services. – Potential public health and social risks associated with the influx of workers.	– Increased recreational and community opportunities. ▪ Negative Impacts – Increased traffic volumes associated with operational activities and events. – Increased demand on local infrastructure and municipal services. – Noise nuisance associated with motorsport activities.
Air Quality	▪ Dust generation from vegetation clearing, site preparation, excavation and earthworks. ▪ Dust generation from construction vehicle movement on exposed surfaces and access roads. ▪ Exhaust emissions from construction vehicles, machinery and equipment. ▪ Dust nuisance experienced by nearby receptors.	▪ Vehicle exhaust emissions associated with normal site operations and increased traffic volumes. ▪ Exhaust emissions associated with motorsport activities. ▪ Dust generation from vehicle movement on internal roads, parking areas and exposed surfaces. ▪ Localised deterioration of air quality associated with maintenance and operational activities. ▪ Air quality nuisance impacts experienced by nearby receptors.
Visual	▪ Temporary degradation of visual quality due to vegetation clearing, earthworks, stockpiles, construction equipment and construction activities. ▪ Visual disturbance associated with the presence and movement of construction vehicles and machinery. ▪ Temporary alteration of views experienced by road users, nearby residents and other visual receptors. ▪ Increased visibility of disturbed ground and construction infrastructure within the landscape.	▪ Change in landscape character through the introduction of industrial buildings, motorsport infrastructure, solar PV panels and associated infrastructure. ▪ Increased industrialisation of the receiving environment and surrounding viewsheds. ▪ Visual intrusion experienced by surrounding visual receptors, including users of the N2 and R327, nearby homesteads, Reed Valley, Petroport and the western extent of Mossel Bay and Kwanonqaba. ▪ Increased visibility of built infrastructure within the landscape. ▪ Alteration of existing views due to the presence of permanent development infrastructure. ▪ Potential glare effects associated with solar PV panels under certain viewing conditions. ▪ Night-time visual impacts associated with lighting of the industrial area and motorsport facilities.
Noise & Vibration	▪ Temporary increase in ambient noise levels due to vegetation clearing, earthworks and general construction activities. ▪ Noise generated by construction vehicles, heavy machinery and equipment. ▪ Disturbance and noise nuisance experienced by nearby residences, agricultural properties and tourism facilities.	▪ Increased noise levels associated with motorsport activities and racing events. ▪ Noise generated by high-performance racing vehicles, particularly during major motorsport events. ▪ Noise associated with public address systems, maintenance activities and supporting infrastructure.

Environmental Factor	Construction Phase Potential Issues / Impacts	Operational Phase Potential Issues / Impacts
	▪ Temporary disruption of the existing acoustic environment during peak construction activities.	▪ Noise nuisance and disturbance experienced by surrounding noise-sensitive receptors, including nearby residences, farms and tourism facilities. ▪ Potential exceedance of acceptable noise limits at receptors located closest to the facility during high-noise events. ▪ Disturbance to agricultural activities and sensitive receptors within the surrounding area due to periodic motorsport events. ▪ Increased community annoyance and potential noise-related complaints associated with motorsport operations.
Agriculture	▪ Permanent loss of agricultural land within the development footprint. ▪ Loss of grazing land currently used for low-intensity livestock grazing. ▪ Loss of abandoned cultivated land and future agricultural use potential. ▪ Disturbance and removal of agricultural soils during vegetation clearing and earthworks.	▪ Permanent conversion of agricultural land to industrial, motorsport and alternative energy land uses. ▪ Reduction in land available for future agricultural activities. ▪ Permanent loss of low-capability grazing and agricultural land within the operational footprint.
Hazardous Substances & Waste	▪ Generation of general construction waste. ▪ Generation of hazardous waste, including waste oils, fuels, and contaminated materials. ▪ Soil contamination resulting from accidental spills or leaks of fuels, oils and hazardous substances. ▪ Surface water and groundwater contamination resulting from improper waste management or accidental spillages. ▪ Health and safety risks associated with the handling and storage of hazardous substances. ▪ Visual and environmental nuisance resulting from poor waste management practices.	▪ Generation of hazardous waste associated with motorsport, workshop, industrial and maintenance activities. ▪ Generation of general waste associated with daily operations and visitors to the motorsport facility. ▪ Soil contamination resulting from spills or leaks of fuels, hydrocarbons, oils and chemicals. ▪ Surface water and groundwater contamination resulting from accidental releases of hazardous substances. ▪ Increased environmental and health risks associated with the storage and handling of hazardous substances. ▪ Pollution resulting from the improper storage, handling or disposal of hazardous and general waste.
Traffic	▪ Increased construction vehicle and heavy vehicle traffic on surrounding roads. ▪ Temporary disruption to traffic flow and road safety. ▪ Increased traffic volumes at site access points and along the R327.	▪ Increased traffic volumes associated with the industrial expansion and motorsport arena. ▪ Increased spectator traffic during motorsport events. ▪ Increased vehicle delays and congestion at key intersections. ▪ Increased road safety risks due to higher traffic volumes and turning movements. ▪ Increased demand for parking, pedestrian and public transport facilities.
Historical and Cultural Features	▪ Possible direct impacts on heritage/archaeological resources because of ground disturbance.	-

Environmental Factor	Construction Phase Potential Issues / Impacts	Operational Phase Potential Issues / Impacts
Palaeontology	▪ Disturbance, damage or destruction of fossil material during excavation and earthworks. ▪ Permanent loss of palaeontological resources through the removal of fossil-bearing material. ▪ Permanent sealing-in or burial of fossil resources beneath infrastructure, rendering them inaccessible for future scientific study. ▪ Accidental damage to previously unidentified fossil material exposed during construction activities. ▪ Loss of scientific information associated with fossil resources if discoveries are not appropriately recorded and managed.	No significant operational impacts on palaeontological resources are anticipated, as any impacts would occur during ground disturbance and construction activities
Health	▪ Occupational health and safety risks to construction workers. ▪ Community health and safety risks associated with construction activities and increased traffic. ▪ Public health risks associated with the influx of workers and temporary construction-related disturbance.	▪ Occupational health and safety risks associated with industrial, maintenance and operational activities. ▪ Health and safety risks associated with motorsport activities, spectators and increased traffic volumes. ▪ Health and safety risks associated with the storage and handling of fuels, hydrocarbons and hazardous substances.

12 SENSITIVE ENVIRONMENTAL FEATURES

The following sensitive environmental features associated with the Project's receiving environment are highlighted, for which mitigation measures are included in the EIA Report and EMPr:

- Terrestrial Biodiversity –
  - The Project Area contains remnant areas of Fynbos-Renosterveld and thicket vegetation, including habitat associated with the Endangered Mossel Bay Shale Renosterveld ecosystem.
  - Portions of the site support intact natural habitat of higher ecological sensitivity, including areas containing SCC and protected plant species.
  - The site falls within a terrestrially sensitive biodiversity landscape and overlaps with biodiversity priority areas identified through national and provincial biodiversity planning tools.
  - Areas of higher ecological sensitivity were identified and informed the layout refinement process and designation of a dedicated conservation area.
  - Approximately 15 ha of the site has been allocated as a conservation area to protect ecologically important habitat, support biodiversity conservation and facilitate rehabilitation and alien invasive plant clearing.
- Aquatic Features –

- Drainage features and aquatic habitats occur within the broader Project Area and contribute to ecological functioning within the receiving environment.
- Watercourses delineated by the aquatic specialist occur outside of the proposed development footprint and comprise three depression/pan features and two riverine systems classified as being of medium sensitivity.

- Avifaunal Sensitivity –
  - Habitat suitable for a range of bird species, including SCC, occurs within the broader Project Area and surrounding agricultural landscape.
  - The surrounding landscape provides foraging and movement habitat for avifauna and contributes to ecological connectivity within the area.
- Noise Sensitivity –
  - Sensitive noise receptors occur within the broader Project Area, including nearby residential, tourism, hospitality and business-related land uses.
  - The proposed motorsport arena has the potential to generate elevated noise levels during operational racing events, particularly higher-intensity motorsport events.
  - The Noise Impact Assessment (De Jager, 2026) identified the need for operational controls, monitoring and mitigation measures to manage potential noise impacts at surrounding receptors.
  - Existing industrial activities, road traffic and future development within the Mossdustria area contribute to the cumulative noise environment.
- Visual Character and Sense of Place –
  - The Project Area occurs within a rural landscape that is influenced by agricultural activities, PetroSA, the Mossdustria Industrial Area and existing transport infrastructure.
  - Sensitive visual receptors occur within the surrounding area, including adjacent tourism, recreational, commercial and agricultural land uses, specifically to the east of the Project site. The Visual/Landscape Impact Assessment (Marshall, 2023) recommended screening along the eastern border of the Project site to mitigate the proposed Project's effects on this adjacent visual receptor.
- Sensitive receptors –
  - Sensitive receptors occur in relation to traffic and socio-economic impacts, including surrounding businesses, tourism facilities, agricultural land uses and road users.
  - The N2/R327 intersection was identified as a sensitive transportation receptor due to anticipated cumulative traffic growth associated with existing and future development within the Mossdustria node.
  - Existing road users along the N2, R327 and surrounding access roads may be sensitive to increased traffic volumes associated with the construction and operational phases of the Project, including motorsport-related activities and future development within the broader Mossdustria area.

Combined sensitivity maps in terms of the terrestrial environment, water resources and noise receptors are provided in **Figure 3** to **Figure 6** below, respectively.

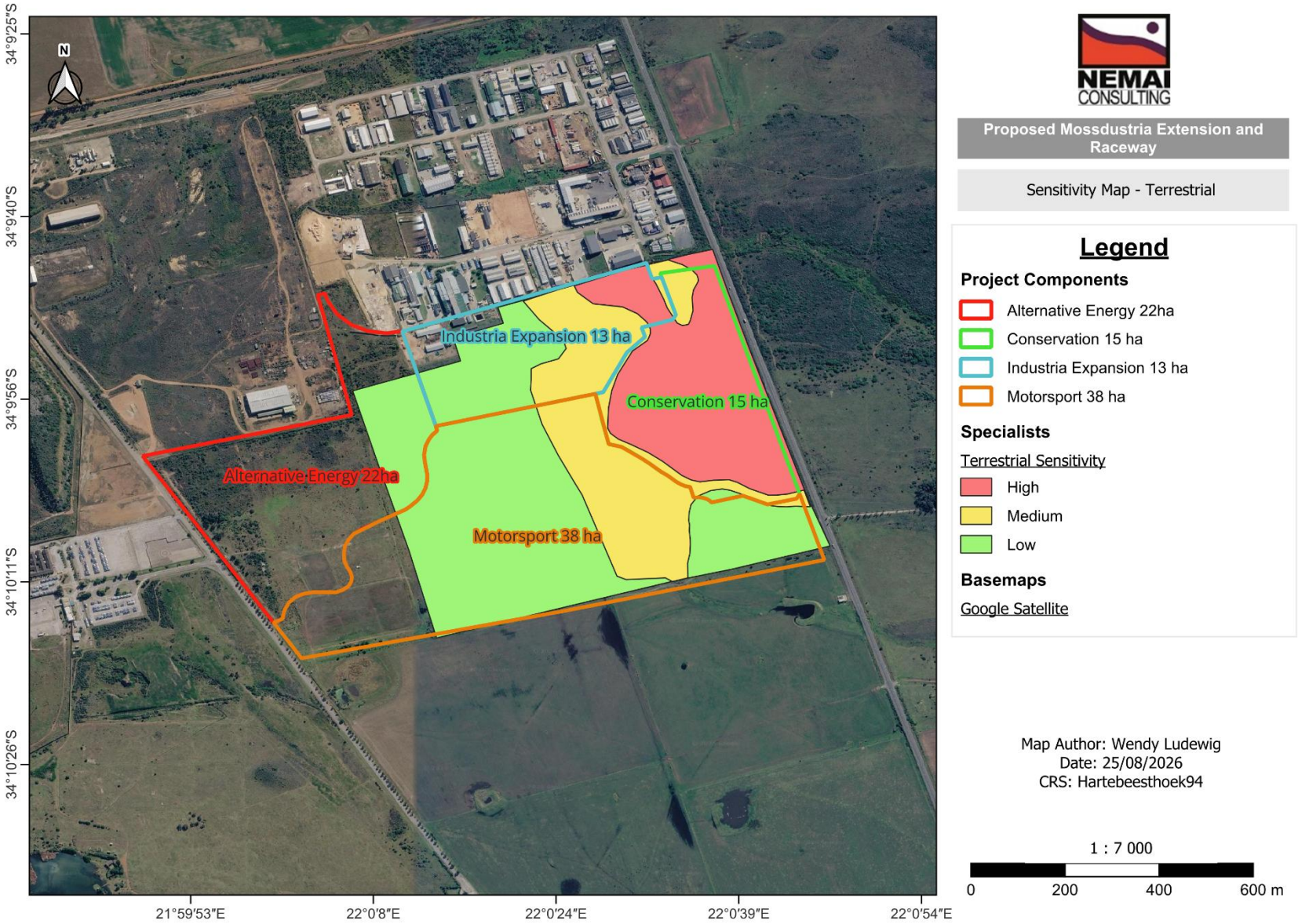


Figure 3: Combined Sensitivity Map – Terrestrial Environment

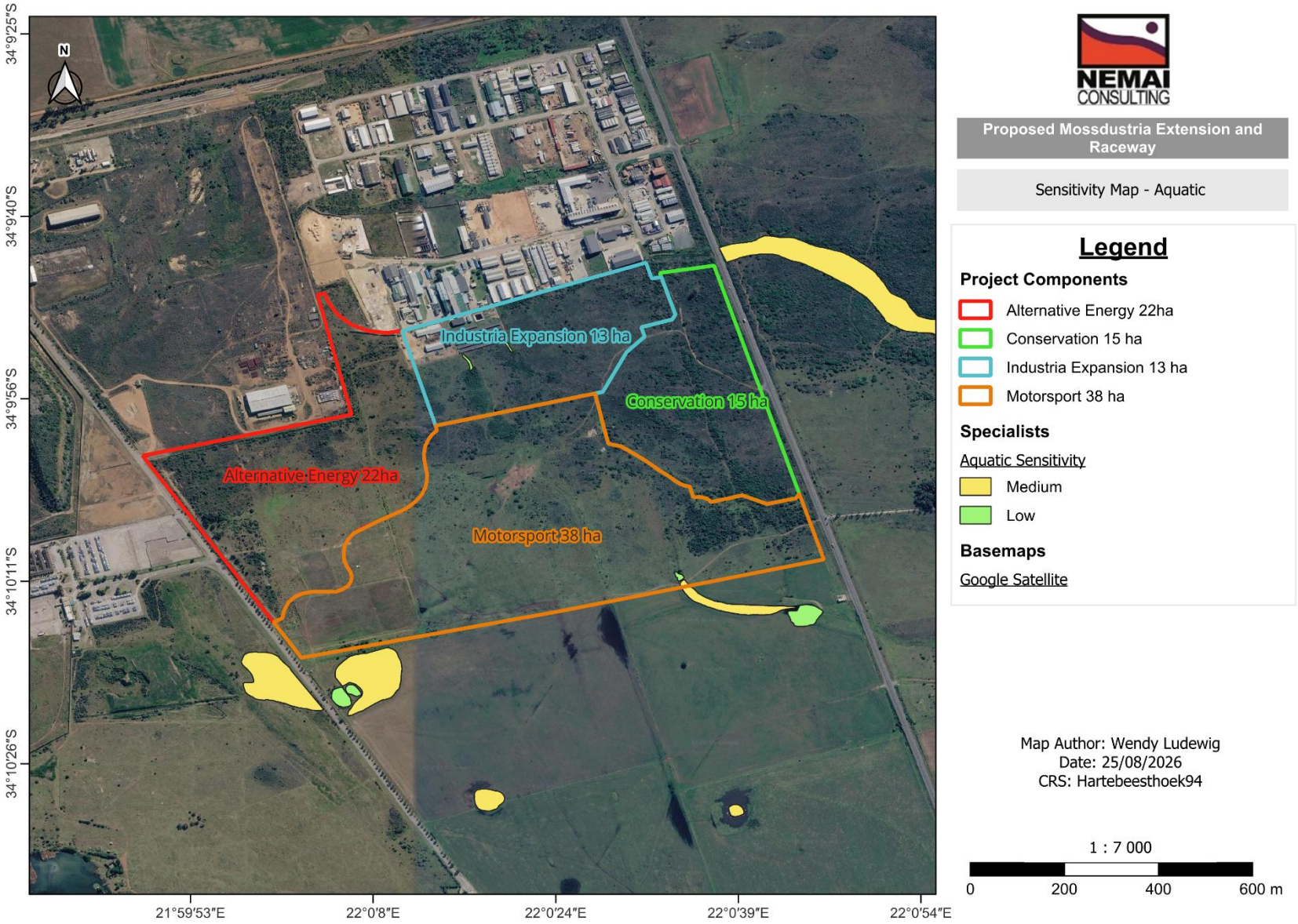


Figure 4: Combined Sensitivity Map – Water Resources

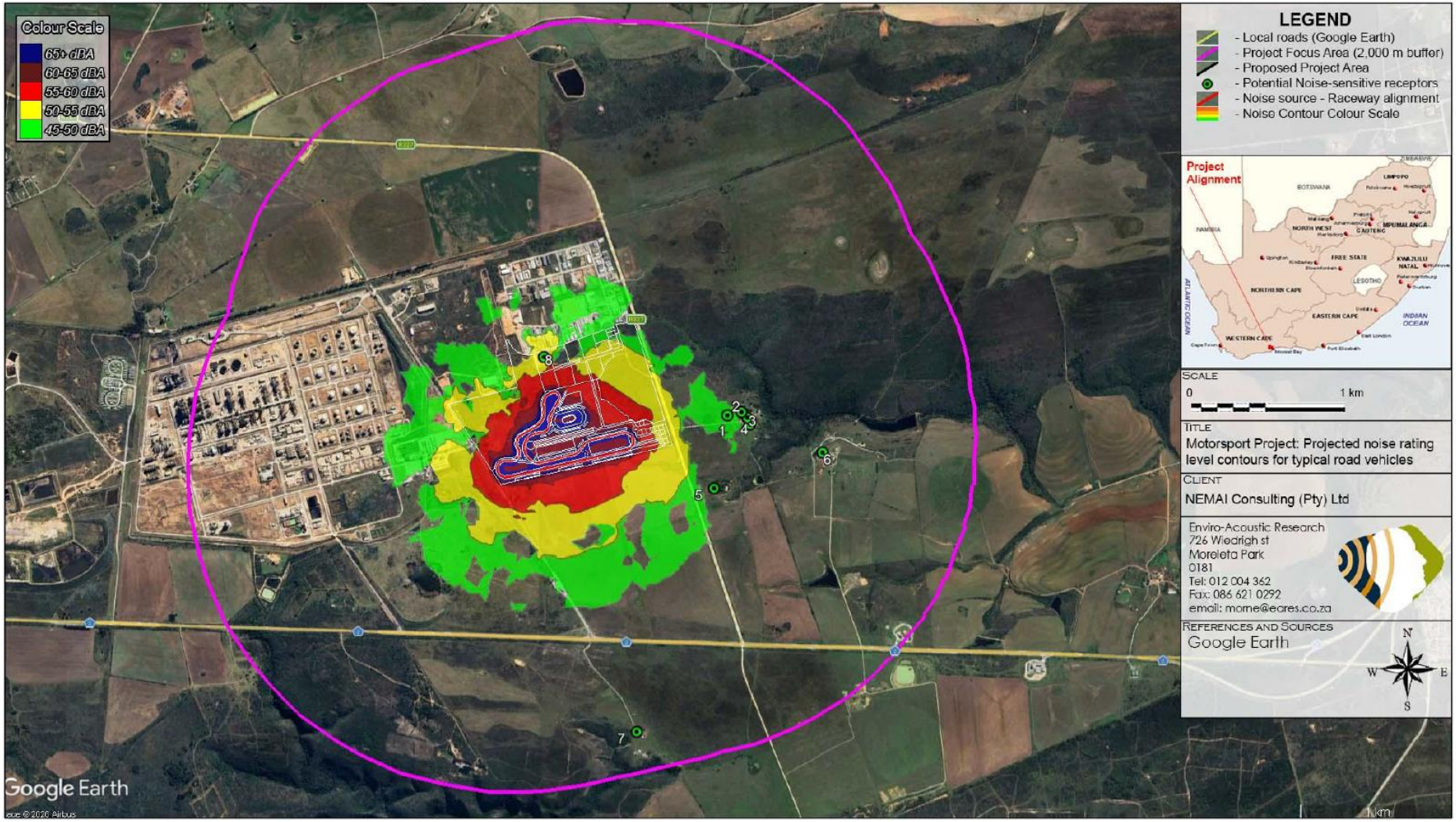


Figure 5: Combined Sensitivity Map - Noise Rating Level for a race with Light LMV

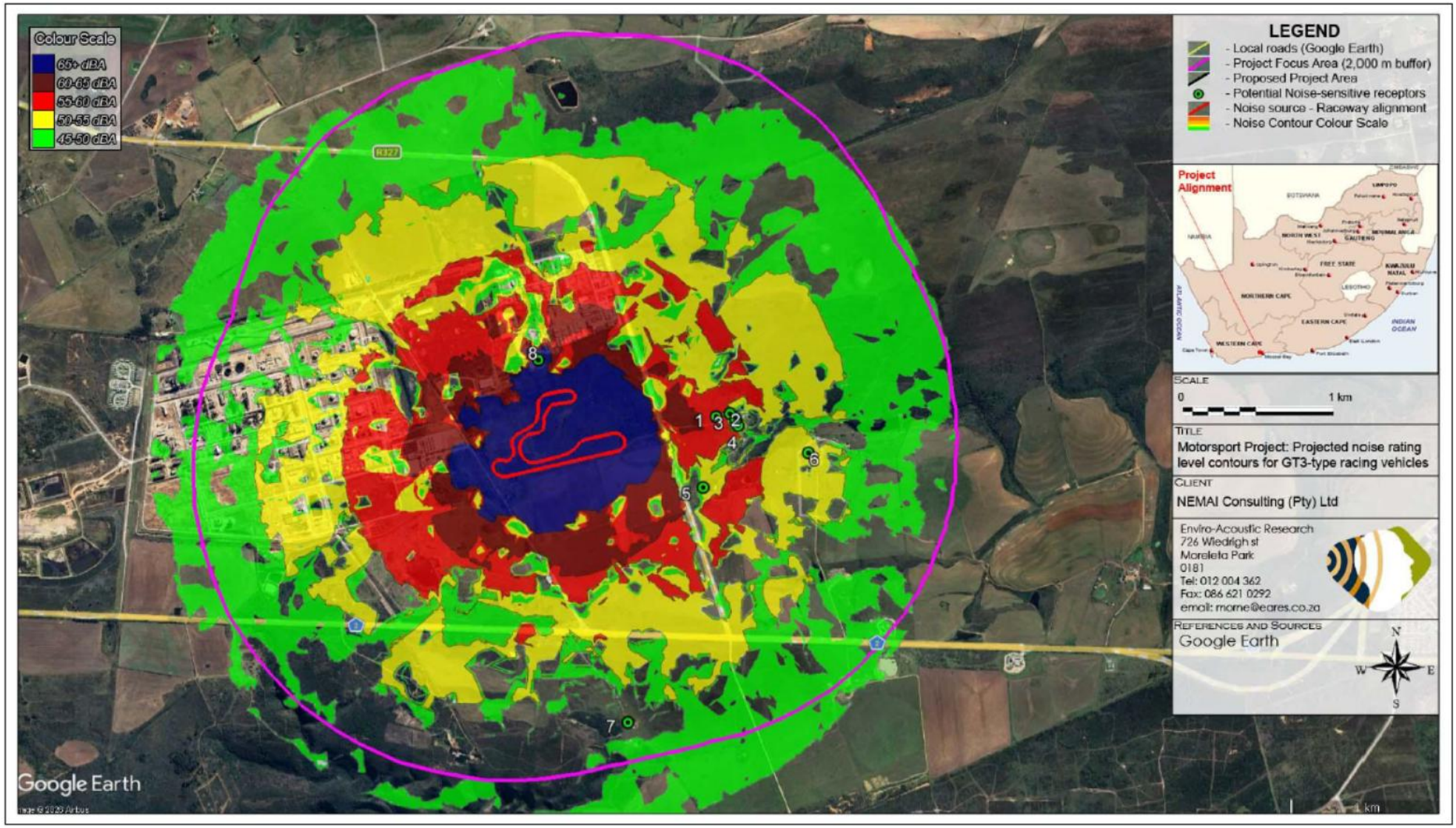


Figure 6: Combined Sensitivity Map - Noise Rating Level for a race with GT3-class vehicles

13 IMPACT MANAGEMENT

13.1 Introduction

As mentioned, the EIA Report identifies mitigation measures for potential impacts that may be caused during the Project's lifecycle. These measures must be implemented to ensure that impact significance levels are acceptable.

The Applicant shall ensure that the mitigation measures presented in the EIA Report and the EMPr are implemented.

The mitigation measures are presented in the sub-sections to follow. The framework for the subsequent mitigation and management measures consists of the following:

- **Management objectives** – i.e. desired outcome of management measures for mitigating negative impacts and enhancing the positive impacts related to project activities and aspects (i.e. risk sources);
- **Targets** – i.e. level of performance to accomplish management objectives;
- **Management actions** – i.e. practical actions aimed at achieving management objectives and targets;
- **Responsibilities**; and
- **Monitoring requirements** (also refer to the environmental monitoring requirements listed in **Table 5** above).

13.2 Pre-Construction and Construction Phases

13.2.1 Administrative Requirements

Management Objectives	▪ Ensure that all administrative measures and arrangements associated with the compliance with the EA and EMPr are in place.
Targets	▪ Administrative measures and arrangements are confirmed, checked and maintained. ▪ Document control procedure is in place.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Adequate financial provision is made for the implementation of the conditions of the EA and the mitigation measures contained in the EMPr. Differentiate between those requirements that relate to the Applicant/Proponent, Contractor, environmental team and other responsible parties.	▪ Proponent & Contractor – administrative provisions for compliance. ▪ EO and ECO – to monitor compliance.	▪ Pre-construction & construction phases.	▪ Financial provisions (e.g. bill of quantities, budgets, etc.).	▪ Once-off, prior to construction.
▪ Document control procedure shall be provided and adhered to. ▪ Filing system shall be provided and maintained.		▪ Throughout the duration of the construction period.	▪ Document control procedure. ▪ Filing systems.	▪ Monthly.

13.2.2 Site Layout and Establishment

Management Objectives	▪ Proper planning and layout of construction domain to ensure protection of receiving environment and to manage impacts. ▪ Minimise negative environmental impacts associated with site establishment.
Targets	▪ All construction activities to take place within the approved site plan. ▪ No negative impacts to the receiving environment as a result of poor site planning, layout and establishment. ▪ The entire construction footprint shall be included in the pre-construction survey. ▪ No damage to the receiving environment outside of the demarcated construction area during site establishment. ▪ No justifiable complaints regarding general disturbance and nuisance.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Conduct a pre-construction survey of the area to be affected by construction activities. This shall include site investigations with photographic records.	▪ Contractor to implement management actions. ▪ PM to approve site layout. ▪ EO and ECO - to monitor compliance.	▪ Prior to the establishment of the construction site.	▪ Pre-construction survey report.	▪ Once-off, prior to site establishment.
▪ The Contractor shall produce a site plan for the approval of the PM prior to the establishment of the site, which aims to identify construction activities, facilities and structures in relation to sensitive environmental features. This plan will serve as a spatial tool that facilitates the execution of the construction phase with due consideration of sensitive environmental features. The plan shall show the following (as relevant): o Contractors' camp and laydown areas; o Site offices; o Site laboratories; o Batching area; o Access routes; o Gates and fences; o Essential services (permanent and temporary water, electricity and sewage); o Solid waste storage and disposal sites; o Site toilets and ablutions; o Hazardous waste storage and disposal site; o Firebreak; o Excavations and trenches; o Cut and fill areas; o Topsoil stockpiles; o Spoil areas; o Construction material stores; o Vehicle and equipment stores; o Workshop; o Wash bay;			▪ Approved site plan. ▪ Barricading and signage. ▪ Records of awareness creation.	▪ Once-off, prior to site establishment – site plan approval. ▪ Monthly – compliance with site plan.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Fuel stores; ○ Hazardous substance stores; ○ Sensitive environmental features (including the Conservation Area and the watercourses that run to the south of the Project site); and ○ Any other activities, facilities and structures deemed relevant.				
▪ The Contractor shall produce a method statement for site establishment. ▪ Locate site camp, laydown area and storage facilities in areas that are already disturbed. ▪ Fence off site camp, if deemed necessary. ▪ Maintain barricading around sensitive environmental features until the cessation of construction works.	▪ Contractor to implement management actions. ▪ PM to approve method statement. ▪ EO and ECO - to monitor compliance.	▪ Prior to the establishment of the construction site.	▪ Approved method statement. ▪ Evidence of site establishment in accordance with method statement (photographic records). ▪ Adequate fencing and barricading.	▪ Once-off, prior to site establishment – method statement approval. ▪ Monthly – compliance with management actions. ▪ Fencing and barricading – monthly.

13.2.3 Environmental Awareness Creation

Management Objectives	▪ Ensure that the Contractor, construction workers and site personnel are aware of the relevant conditions of the EA and provisions of the EMPr.
Targets	▪ All construction workers and employees are to have completed appropriate environmental training before being allowed to undertake any construction work. ▪ A record of environmental training undertaken shall be kept on site.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Environmental Training and Awareness Programme shall be developed, which is to be approved by the PM/ECO. ▪ The Contractor shall arrange that all of his employees and those of his sub-contractors go through the project specific environmental awareness training courses before the commencement of construction and as and when new staff or sub-contractors are brought on site. ▪ The environmental training is compulsory for all employees and structured in accordance with their relevant rank, level and responsibility, as they apply to the works and site. ▪ Courses must be provided by suitably qualified persons and in a language and medium understood by the workers (including English, Afrikaans and isiXhosa). ▪ Place posters containing environmental information at areas frequented by the construction workers (e.g. eating facilities).	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ From pre-construction and throughout the duration of the construction period.	▪ Records of training and awareness creation (e.g. training material, training programme, completed attendance registers, etc.)	▪ Monthly.

13.2.4 Stakeholder Communication

Management Objectives	▪ Maintain adequate communication with stakeholders regarding construction activities. ▪ Effectively manage grievances raised by Interested and Affected Parties (I&APs). ▪ Adhere to agreements made with custodians of infrastructure as well as neighbouring operations and landowners (as relevant).
Targets	▪ All complaints and claims shall be acknowledged within 5 working days and shall be responded to within 10 working days of receipt, unless additional information and / or clarification are required.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Establish lines of communications with stakeholders (including authorities, adjoining operations and businesses and landowners and community members). ▪ Develop a GRM. ▪ Make use of established communication channels when engaging with stakeholders. ▪ Provide advance notice of construction schedules and restricted areas (if relevant). ▪ Complaints or liaison with surrounding businesses, landowners and community members with regard to environmental aspects shall be recorded, reported to the correct person and a record of the response shall be entered in the complaints register. ▪ Provide the relevant contact details to surrounding businesses, landowners and community members for queries / raising of issues or complaints. ▪ Provide all information, especially technical findings, in a language that is understandable to the general public (including English, Afrikaans and isiXhosa). ▪ Ensure that communities, landowners, businesses and the general public can use surrounding public roads and access roads.	▪ Contractor to implement management actions. ▪ SO – manage stakeholder relations and the GRM. ▪ EO and ECO - to monitor compliance.	▪ From pre-construction and throughout the duration of the construction period.	▪ Documented GRM. ▪ Proof of communication. ▪ Related entries into Public Complaints Register.	▪ Monthly.

13.2.5 Management of Security

Management Objectives	▪ The safety and security of surrounding businesses, landowners and community members is of paramount importance and shall not be compromised by the Project's construction activities.
Targets	▪ No security-related incidents associated with the labour force and construction activities.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Ensure suitable management of the labour force to prevent security-related issues or disturbance to landowners, surrounding businesses and community members. ▪ A security policy shall be developed which, amongst others, requires that permission be obtained prior to entering any property outside of the construction area, and which makes provision for controlling trespassing by construction workers. ▪ Only security staff shall be allowed to reside at the construction camp. ▪ The construction camp shall be fenced for the duration of construction. ▪ The Contractor shall establish crime awareness programmes at the site camp. ▪ *See requirements for Management of Labour Force, Management of Health and Safety, and Management of Access.*	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ From pre-construction and throughout the duration of the construction period.	▪ Intact fencing. ▪ Contractor's method statement. ▪ Related entries into Public Complaints Register.	▪ Monthly.

13.2.6 Site Clearing

Management Objectives	▪ Manage environmental impacts associated with site clearing. ▪ Ensure that only areas that are specifically required for construction purposes are cleared.
Targets	▪ No area outside of authorised footprint to be cleared.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The Contractor shall produce a method statement for site clearing. ▪ Restrict site clearing activities to the approved construction area.	▪ Contractor to implement management actions. ▪ PM to approve method statement.	▪ From pre-construction and throughout the duration of site clearing activities.	▪ Approved method statement. ▪ Evidence of site clearing in	▪ Once-off, prior to site clearing – method statement approval.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ No damage shall be caused to sensitive environmental features outside of the demarcated construction area (especially with regard to the Conservation Area and watercourses surrounding the Project site).	▪ EO and ECO - to monitor compliance.		accordance with method statement (photographic records).	▪ Monthly – compliance with management actions.

13.2.7 Management of Existing Services and Infrastructure

Management Objectives	▪ Prevent impacts to existing services and infrastructure. ▪ Adhere to agreements made with owners/custodians of services and infrastructure (as relevant).
Targets	▪ No unwarranted complaints regarding damages or disturbances to existing services and infrastructure. ▪ No damages or disturbances to existing services and infrastructure. ▪ All relevant approvals shall be obtained prior to working within existing servitudes (if required).

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Identify and record existing services and infrastructure. ▪ Safeguard/deviate existing services to accommodate construction activities, as necessary. ▪ Conform to requirements of relevant service providers and infrastructure custodians. ▪ Ensure access to infrastructure is available to service providers at all times. ▪ Accommodate existing operations within the Mossdustria Industrial Area. ▪ Immediately notify the relevant authority or service provider of any disturbance or damage to infrastructure. Repair or reinstate damaged infrastructure in consultation with the relevant infrastructure owner. ▪ Maintain records of infrastructure disturbances, incidents and corrective actions.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ From pre-construction and throughout the duration of the construction period.	▪ Proof of identification of existing services and infrastructure. ▪ Proof of safeguarding / relocation of existing services and infrastructure. ▪ Inspection records.	▪ Monthly / as required if an incident occurs.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Monitor vibrations during excavation or blasting (if required) near sensitive structures. ▪ Adequate reinstatement and rehabilitation of affected environment. ▪ Implement routine inspections and maintenance of operational infrastructure and service connections.				

13.2.8 Management of Access and Traffic

Management Objectives	▪ Ensure that all construction vehicles use only dedicated access routes to construction area. ▪ Ensure proper access control. ▪ Prevent unlawful access to the construction area. ▪ Ensure the safety of all road users by implementing proper signage and traffic control measures. ▪ Limit construction-related nuisance.
Targets	▪ No reports of construction vehicles using unauthorised routes. ▪ No direct harm to third parties due to inadequate access control. ▪ No transporting of unsafe loads. ▪ No speeding by construction vehicles. ▪ No accidents caused by construction activities.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Traffic Study: o Maintain a minimum sight distance of 300 m at construction access points on the R327 and ensure that construction-related objects do not obstruct visibility. o Ensure construction vehicle access and egress occurs in a safe and controlled manner	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period.	▪ Visible signage (photographic records) ▪ Proof of training. ▪ Related entries into Public Complaints Register. ▪ Inspection of access roads	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Determine and document the condition of roads affected by construction traffic, including the R327, Unicorn Street, Barrie Street and roads within the existing Mossdustria Industrial Area, and repair any construction-related damage. ▪ Obtain all necessary approvals and permits from the relevant road authorities prior to commencement of construction activities. ▪ Construction vehicle routes shall be clearly designated and communicated to all contractors and drivers, and only approved routes shall be utilised. ▪ Manage construction vehicle movements and deliveries to minimise disruption to existing road users and avoid peak traffic periods where practical. ▪ Permissions shall be obtained for the transportation of all abnormal loads. ▪ Proper access control shall be maintained to prevent unauthorised access to construction areas. ▪ Implement appropriate traffic accommodation, road safety measures and warning signage in accordance with the requirements of the relevant road authorities. ▪ Appropriate measures shall be implemented to protect pedestrians where construction traffic interacts with public roads and existing industrial activities. ▪ Maintain all construction vehicles in a roadworthy condition. ▪ Roads affected by construction traffic shall be kept free of mud, debris, spillages and construction materials.			(photographic records).	

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Strictly enforce speed limits for construction vehicles on public roads and access roads. ▪ Where construction vehicles access the R327 or N2, appropriate traffic control measures shall be implemented where required, including traffic marshals, temporary speed reductions and warning signage. ▪ Record and investigate all traffic-related incidents, accidents and complaints associated with construction activities and implement corrective actions where required.				

13.2.9 Fencing Arrangements

Management Objectives	▪ Maintain adequate fencing for the construction site.
Targets	▪ Fencing to be installed prior to commencement of construction activities. ▪ Fencing to be kept in good condition. ▪ Damaged fencing to be repaired timeously.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Erect fencing around the construction camp, hazardous storage areas, and all access with restricted areas, as relevant. ▪ All fences erected for construction purposes shall be inspected to detect whether any damage has occurred. Damaged fences shall be repaired immediately. ▪ Maintain access control to the construction area. ▪ Remove temporary fencing once construction activities have been completed.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ From pre-construction and throughout the duration of the construction period.	▪ Inspection of fencing (photographic records). ▪ Related entries into Public Complaints Register.	▪ Monthly.

13.2.10 Management of Labour Force

Management Objectives	▪ Ensure suitable management of the labour force to prevent security-related issues or disturbance to surrounding landowners, businesses and community members. ▪ Optimise the use of local labour. ▪ Provide a work environment that is conducive to effective labour relations.
Targets	▪ No complaints from landowners, surrounding businesses and community members regarding trespassing or misconduct by construction workers. ▪ All unskilled labour to be sourced from the local area as far as possible.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Socio-Economic Impact Assessment: o Community participation with relevant stakeholders is important. o Co-ordinate with the local municipality and relevant labour unions to inform the local labour force about the proposed project and the jobs that can potentially ensue. o Establish a local skills desk in Mossel Bay to determine the potential skills that could be sourced in the area. o Prioritise the employment of suitably qualified local labour, particularly for unskilled and semi-skilled positions, where feasible. o Employ labour-intensive methods in construction where feasible. o Sub-contract to local construction companies, particularly SMMEs and BBBEE compliant enterprises, where possible. o Use local suppliers where feasible and arrange with the local SMMEs to provide transport,	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the period that construction labour is required.	▪ Code of Conduct displayed. ▪ Proof of training. ▪ Related entries into Public Complaints Register. ▪ Labour-related targets.	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
catering, and other services to the construction crews. o Set clear expectations with contractors to promote fair recruitment of both women and men for suitable construction roles, and avoid unnecessary barriers that exclude women. o Provide a safe, respectful working environment through a code of conduct that prohibits discrimination, harassment and gender-based violence, with simple reporting and follow-up procedures. o Ensure basic gender-sensitive facilities and conditions on site, including appropriate personal protective equipment (PPE), safe sanitation and secure transport arrangements for all workers. o Offer basic training, skills development and on-the-job learning opportunities that are open to women as well as men, helping to improve longer-term employability in the construction sector. ▪ Induction will be mandatory for all workers. ▪ Prohibit trespassing of construction workers on private property. ▪ Workers shall be provided with identity cards and must wear identifiable clothing. ▪ Creating disturbances in surrounding businesses and communities shall be prohibited. ▪ Designated smoking areas shall be provided, with special bins for discarding of cigarette butts. ▪ Develop a grievance procedure, which also needs to address gender matters.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Prioritise and articulate gender inclusivity and equity in the project documents by including specific strategies and guidelines for implementation. ▪ All employment of locally sourced labour shall be controlled on a contractual basis. If possible, and if the relevant Ward Councillor deem it necessary, the employment process must include the affected Ward Councillors. ▪ No staff accommodation must be allowed on site (except for security personnel).				

13.2.11 Management of Construction Camp

Management Objectives	▪ Minimise environmental impacts associated with construction camp.
Targets	▪ No environmental contamination associated with construction camp. ▪ Minimise visual impact associated with construction camp and eating areas. ▪ Prevent socio-economic impacts associated with the construction camp.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Erect suitable fencing around the construction camp. ▪ Provide essential services (including appropriate sanitation and drinking water facilities) at the construction camp. Maintain essential services in a functional state. ▪ Provide adequate parking for site staff and visitors. ▪ Open uncontrolled fires will be forbidden at the site camp. ▪ Eating areas shall be designated and demarcated. ▪ Allow areas for social interaction. ▪ Sufficient vermin / weatherproof bins shall be present in this area for all waste material.	▪ Contractor to implement management actions. ▪ PM to approve de-establishment plan for construction camp. ▪ EO and ECO - to monitor compliance.	▪ Period from when the construction camp is created up to de-establishment.	▪ Visual inspections construction camp (photographic records). ▪ Approved de-establishment plan. ▪ Waste disposal certificates.	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Ensure that wastewater is appropriately disposed of. ▪ Locate all storage areas and material laydown sites within predetermined zones as per the approved site plan. ▪ Keep the camp and all its storage and laydown areas secure and neat at all times. ▪ Employ appropriate access control measures. ▪ Suitable security shall be provided at the construction camp at all times. ▪ Manage stormwater from construction camp to avoid environmental contamination and erosion. ▪ Provide medical and first aid facilities at the construction camp. ▪ Prepare de-establishment plan for construction camp for approval by the PM. ▪ Provide firefighting equipment at the camp area. ▪ *See requirements for Management of Waste, Management of Water, Management of Labour Force, Management of Ablution Facilities, Management of Storage and Handling of Non-Hazardous and Hazardous Material, Management of Workshop and Equipment, and Management of Flora and Fauna*.			▪ Agreements with service providers (as relevant). ▪ Proof of training. ▪ Related entries into Public Complaints Register.	

13.2.12 Management of Ablution Facilities

Management Objectives	▪ Provide and maintain functional ablution facilities. ▪ Minimise environmental impacts associated with ablution facilities. ▪ Minimise visual impact associated with ablution facilities.
Targets	▪ No environmental contamination associated with ablution facilities.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Provide sufficient ablution facilities (e.g. mobile / portable toilets) at the construction camp and within the construction area, which shall conform to all relevant health and safety standards and codes. ▪ No pit latrines, french drain systems or soak away systems shall be allowed. ▪ A sufficient number of toilets shall be provided to accommodate the number of personnel working in any given area. Toilets may not be further than 100m from any working area. Toilet facilities supplied by the Contractor for the workers shall occur at a maximum ratio of 1 toilet per 15 workers. ▪ There must be separate toilets for men and women. ▪ All temporary / portable / mobile toilets shall be secured to the ground to prevent them from toppling over due to wind or any other cause. ▪ Ensure the proper utilisation, maintenance and management of toilet, wash and waste facilities. ▪ The entrances to the toilets shall be adequately screened from public view. ▪ Ablution facilities shall be maintained in a hygienic state and serviced regularly. ▪ Toilet paper shall be provided. ▪ The Contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied and that a licensed service provider removes the contents from site. Disposal of such waste is only acceptable at a licensed waste disposal facility (proof of disposal to be provided). ▪ Should shower facilities be provided for use by staff on site, the following controls shall be imposed: o Proper positioning of the shower, and specifically its discharge point, shall be carried out to ensure	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period.	▪ Inspection of ablution facilities (photographic records). ▪ Maintenance register for ablution facilities. ▪ Waste disposal certificates. ▪ Related entries into Public Complaints Register.	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
that erosion and build-up of detergents does not occur; o All discharge from the shower and other washing facilities shall be managed to prevent environmental contamination; and o Use of the shower facilities shall be limited to staff or authorised persons only.				

13.2.13 Management of Visual Aspects

Management Objectives	▪ Ensure that the visual appearance of the construction area is not an eyesore to the adjacent areas.
Targets	▪ No verified complaints regarding visual impacts caused as a result of construction activities and facilities.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Landscape/Visual Impact Assessment: o Maintaining a 30m wide buffer and augmenting existing trees on the eastern boundary of the proposed site and along the R327 in order to visually soften views of the development from the east. o The use of bright colours that contrast with the natural colours of the landscape is likely to make the development visually prominent. Bright contrasting colours should therefore be avoided. ▪ On-going housekeeping to maintain a tidy construction site.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period.	▪ Inspection of project area (photographic records). ▪ Related entries into Public Complaints Register.	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Ensure that waste is regularly removed and disposed of at licensed facilities. No accumulation of waste on-site shall be permitted. ▪ Ensure proper storage of construction material. ▪ Restrict vegetation clearing and ground disturbance to the approved construction footprint to minimise the visual extent of disturbed areas.				

13.2.14 Management of Water

Management Objectives	▪ Minimise environmental impacts associated with stormwater as well as water services for construction workers.
Targets	▪ No visual evidence of erosion caused by wastewater or stormwater practices. ▪ No environmental contamination associated with wastewater or stormwater practices. ▪ No water wastage (water conservation).

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ All construction activities to comply with the NWA. ▪ Any water to be sourced directly from natural watercourses or groundwater will require the necessary authorisation in terms of Section 21 of the NWA, as relevant. ▪ Implement recommendations from the Geohydrology Impact Assessment related to groundwater. ▪ Practice water conservation. Prevent leakages from pipes or taps. ▪ Establish a dedicated vehicle maintenance area and wash-bay, where suitable stormwater management measures are in place to prevent pollution. ▪ Manage stormwater from construction site to avoid environmental contamination and erosion.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period.	▪ Authorisations under NWA (if required). ▪ Evidence of compliance with NWA authorisation conditions. ▪ Inspection of project area (photographic records). ▪ Water monitoring programme –	▪ Continuous (development footprint) ▪ Monthly (inspections) ▪ Immediately after incidents.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Stormwater runoff from workshops, vehicle maintenance area, wash-bay and other potential pollution sources shall be collected and treated in hydrocarbon separation pits/tanks before being discharged in to drains and/or waterways. ▪ All wastewater discharges shall comply with legal requirements associated with the NWA. ▪ Wastewater discharges shall form part of water monitoring programme. ▪ Manage stormwater runoff, as specified by the contracted civil engineer. ▪ Prevent erosion on access roads due to construction traffic. ▪ Reduce sediment loads in water from dewatering operations. All dewatering should be done through temporary sediment traps (e.g. constructed out of geo-textiles and hay bales). ▪ Ensure proper storage and careful handling of material that could cause water pollution. ▪ Stockpiles kept on site for more than two weeks will require an impervious cover (e.g., builder's plastic or geofabric) to protect against raindrop impact. Stockpiles of sandy material located behind a sediment fence will only require a protective cover if they are likely to be exposed to strong winds. ▪ Adequate waste containers must be provided on-site and maintained in a way that potential and actual environmental harm resulting from such material waste is minimised. ▪ Building activities must be carried out on a pervious surface, such as grass or open soil, or in such a manner that all sediment-laden runoff is prevented from discharging into a water body.			water use and discharges (if applicable).	

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Ensure that eroded areas are re-vegetated, to ensure reduced sedimentation risk and reduced runoff volumes to the streams. ▪ Park heavy machinery in lined areas and place drip trays under vehicles at the site. ▪ Backfill the material in the same order it was excavated to reduce contamination of deeper soils with shallow oxidised soils. ▪ Retain as much indigenous vegetation as possible. ▪ Exposed soils are to be protected using a suitable covering or revegetation. ▪ Visual soil assessments for signs of contamination during construction.				

13.2.15 Management of Soil and Erosion

Management Objectives	▪ Ensure suitable removal, storage and transportation of topsoil for re-use during rehabilitation. ▪ Minimise erosion of areas cleared by construction activities. ▪ Ensure adequate management of potentially contaminated soil that may be encountered on the site due to previous land use practices on and adjacent to the site.
Targets	▪ At least 95% of recovered topsoil from disturbed areas is to be stored for future use. ▪ No visual evidence of erosion from topsoil stockpiles. ▪ No visual evidence of erosion from areas where topsoil has been reinstated.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Remove, stockpile and preserve topsoil for re-use during rehabilitation (outside permanent development footprint and within the conservation area (if required)) as the final soil layer. Determine the average depth of the topsoil prior to excavations, as relevant.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Prior to site clearing up to when topsoil is used for rehabilitation.	▪ Inspection of project area (photographic records).	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Stabilise cleared areas to prevent and control erosion. The method chosen (e.g. watering, planting, retaining structures, commercial anti-erosion compounds) will be selected according to the site-specific conditions. ▪ Control drainage over the site to minimise erosion. ▪ Restrict vehicle movement to designated routes. ▪ Acceptable reinstatement and rehabilitation of disturbed areas (outside permanent development footprint and within the conservation area (if required)) to prevent erosion during operational phase.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period.	▪ Inspection of project area (photographic records).	▪ Monthly.
▪ Adequate clean up and remediation of contaminated soil caused by spills and other construction activities.	▪ Contractor to implement management actions.	▪ Throughout the duration of the construction period.	▪ Inspection of project area (photographic records).	▪ As and when required for spills.

13.2.16 Management of Excavations

Management Objectives	▪ Minimise environmental impacts associated with excavations.
Targets	▪ No damage to sensitive environmental features outside construction area during excavations. ▪ No harm to people or animals as a result of excavations.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Implement recommendations from the Geotechnical Investigations (to be undertaken during the detailed design phase) to overcome any geotechnical constraints encountered at the site. ▪ Construction activities shall remain within the designated construction area. ▪ Suitable barricading shall be erected around open excavations / trenches, as per the Construction Regulations (2014) or the prevailing legislation.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Prior to excavations and up to reinstatement.	▪ Excavation register. ▪ Inspection of excavations (photographic records).	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Provide signage as a warning of open excavations. ▪ Divert runoff away from excavations, where necessary. ▪ Provide suitable protection of groundwater during excavations. ▪ Trench lengths shall be kept as short as practically possible. ▪ Trench walls shall be stabilised using battering, shoring and bracing or similar techniques depending on the stability of the trench sides. ▪ Inspect open excavations at least daily to ensure that animals have not become trapped. Such animals will be safely removed and released, where possible. Special equipment for handling of venomous snakes shall be available on site to ensure safe removal. ▪ Make adequate provision for subsidence.				

13.2.17 Management of Storage and Handling of Non-Hazardous Material

Management Objectives	▪ Effective and safe management of materials on site, in order to minimise the impact of non-hazardous materials on the environment.
Targets	▪ No pollution due to handling, use and storage of non-hazardous material.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Materials shall be suitably stored to prevent environmental contamination and visual impacts. ▪ Storage requirements to be determined based on chemical qualities of material and Safety Data Sheets (SDS). ▪ Where required, stored material shall be protected from rain and run-off to avoid environmental contamination.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Period during which materials are stored and handled on site.	▪ Evidence of spillages and appropriate remedial measures. ▪ SDS register. ▪ Inspection of project area	▪ Once-off – method statement approval. ▪ Monthly – compliance with

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Materials shall be appropriately transported to avoid environmental contamination. ▪ Loose loads (e.g. sand, stone chip, refuse, paper and cement) shall be covered when vehicles travel on public roads. ▪ Suitable remedial measures, depending on the nature of the contaminant and the receiving environment, shall be instituted for spillages. ▪ Materials shall be suitably used to prevent environmental contamination.			(photographic records).	management actions.

13.2.18 Management of Storage and Handling of Hazardous Material

Management Objectives	▪ Ensure the protection of the natural environment and the safety of personnel on site, by the correct management and handling of hazardous substances.
Targets	▪ No pollution due to handling, use and storage of hazardous material. ▪ 100% compliance SDS. ▪ In the event of a spill, appropriate containment, clean up and disposal of contaminated material. Spills to be cleaned within 24 hours or sooner (depending on the nature of the spill).

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The Contractor shall develop a method statement for the storage and handling of hazardous substances. ▪ Hazardous substances shall be stored and handled in accordance with the appropriate legislation and standards, which include the Hazardous Substances Act (Act No. 15 of 1973), Occupational Health and Safety Act (Act No. 85 of 1993), relevant associated Regulations and applicable SANS and international standards.	▪ Contractor to implement management actions. ▪ Engineer to approve method statement. ▪ EO and ECO - to monitor compliance.	▪ Period during which hazardous materials are stored and handled on site.	▪ Approved method statement. ▪ Evidence of spillages and appropriate reporting and remedial measures. ▪ SDS register.	▪ Once-off – method statement approval. ▪ Monthly – compliance with management actions.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Storage and use of hazardous materials will be strictly controlled to prevent environmental contamination and will adhere to the requirements stipulated on the SDS. ▪ SDS, which contain the necessary information pertaining to a specific hazardous substance, shall be present for all hazardous materials stored on the site. ▪ All storage tanks containing hazardous materials must be placed in bunded containment areas with impermeable surfaces. The bunded area must be able to contain 110% of the total volume of the stored hazardous material. ▪ Provide sufficient and suitable sanitation facilities during construction and operational phases, which shall conform to all relevant health and safety standards and codes. ▪ Manage batching areas to prevent runoff. Collect and neutralise wash water. ▪ In the event of spillages of hazardous substances, the appropriate clean up and disposal measures shall be implemented. ▪ Use biodegradable cleaning products where possible. Water used for cleaning will not contain any harmful chemicals or additives. ▪ Ensure adequate storage of explosives, if blasting will be required, in accordance with legal requirements. ▪ Record the details and quantities of hazardous and flammable substances on the construction site. ▪ Appropriate signage shall be displayed at storage areas for hazardous substances. ▪ Where flammable liquids are being used, applied or stored the workplace will be effectively ventilated. ▪ No person shall smoke in any place in which flammable liquid is used or stored.			▪ Training register. ▪ Inspection of project area (photographic records).	▪ Immediately after an incident (inspection and rectification).

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Install an adequate number of fire-fighting equipment in suitable locations around the flammable liquids store. ▪ Where flammable liquids are decanted, the metal containers shall be bonded or earthed. ▪ No flammable material (e.g. paper, cleaning rags or similar material) shall be stored together with flammable liquids. ▪ Staff that will be handling hazardous materials will be trained to do so. ▪ Any hazardous materials (apart from fuel) shall be stored within a lockable store with a sealed floor. Suitable ventilation shall be provided. ▪ Spill kits will be available for the clean-up of hazardous material spillages. ▪ Drip trays shall be placed under parked heavy vehicles, equipment and other receptacles of hazardous material to prevent spillages. ▪ Spill reporting procedures shall be displayed at all locations where hazardous substances are being stored. ▪ Hazardous materials will be disposed of at registered sites or handed to registered hazardous waste disposal facilities for disposal / recycling. Proof of adequate disposal shall be provided. ▪ Proper and timeous notification will be undertaken of any pollution incidents associated with hazardous materials. Any major incidents to be reported to DEADP, as per the requirements of Section 30 of NEMA.				

13.2.19 Management of Waste

Management Objectives	▪ Minimise negative environmental impacts associated with waste. ▪ Apply waste management principles to prevent, minimise, recycle or re-use material, with disposal as a last option.
Targets	▪ Maintain a clean and tidy construction site. ▪ A 100% record of all waste generated and disposed of at licenced waste disposal facilities. ▪ Valid disposal certificates for all waste disposed. ▪ Provision of adequate waste containers that are easily accessible and maintained. ▪ Waste bins to be removed and cleaned weekly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The Contractor shall develop a method statement for managing waste. ▪ Waste management activities shall comply with the National Environmental Management: Waste Act (Act No. 59 of 2008). ▪ The storage of general or hazardous waste in a waste storage facility shall comply with the norms and standards in GN No. R. 926 of 29 November 2013. ▪ Vermin / weatherproof bins shall be provided in sufficient numbers and capacity to store domestic waste. These bins shall be kept closed to reduce odour build-up and emptied regularly to avoid overfilling and other associated nuisances. ▪ Segregate recyclables. Where possible, waste shall be separated at source (e.g. containers for glass, paper, metals, plastics, organic waste and hazardous wastes). ▪ Establish and monitor recycling targets. ▪ Provide waste skips at the construction areas. These skips shall be sufficient in number, the skip storage area shall be kept clean, and skips shall be emptied and replaced before overflowing or spillage occurs. ▪ Ensure suitable housekeeping.	▪ Contractor to implement management actions. ▪ Engineer to approve method statement. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period.	▪ Approved method statement. ▪ Waste register. ▪ Recycling targets. ▪ Disposal certificates. ▪ Inspection of project area (photographic records).	▪ Once-off – method statement approval. ▪ Monthly – compliance with management actions.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The Contractor shall ensure that no burying, dumping or burning of waste materials, vegetation, litter or refuse occurs. ▪ All waste will be disposed of at suitable licensed disposal sites, based on the waste type (general versus hazardous). ▪ Wastewater to be properly disposed of. Contaminated water will not be discharged to the environment. ▪ Ensure that waste is transported so as to avoid waste spills *en route*. ▪ Maintain records of all waste that is disposed of.				

13.2.20 Management of Workshop and Equipment

Management Objectives	▪ Minimise environmental impacts associated with workshops and equipment use.
Targets	▪ No environmental contamination associated with workshops and equipment use.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Maintenance of equipment and vehicles will be performed in such a manner so as to avoid any environmental contamination (e.g. use of drip trays). ▪ No washing of plants may occur on the construction site. Plants to be washed in dedicated areas. ▪ Drip trays will be provided for the stationary plants and for the "parked" plants. ▪ All vehicles and equipment shall be kept in good working order and serviced regularly. Leaking equipment will be repaired immediately or removed from the site.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Period from when the workshop is created up to de-establishment. ▪ Period during which equipment is utilised.	▪ Inspection of workshop and equipment (photographic records)	▪ Monthly

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Suitable storage and disposal of hydraulic fluids and other vehicle oils. ▪ All wastewater discharges from the workshop shall comply with the NWA.				

13.2.21 Management of Pollution Generation Potential

Management Objectives	▪ Ensure that all possible causes of pollution are mitigated as far as possible to minimise impacts to the surrounding environment.
Targets	▪ No verified complaints regarding pollution. ▪ No measurable signs of pollution. ▪ Dust fallout and noise levels to adhere to relevant standards. ▪ Water quality – construction activities may not cause an adverse impact that results in more than a 10% change in baseline values. ▪ All water discharges to comply with legal requirements associated with the NWA, including GN No. 399.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Noise – o The provisions of SANS 10103:2008 will apply to all areas within audible distance of residents. o Working hours to be agreed upon with PM, so as to minimise disturbance to landowners/occupiers and community members. o Use well-maintained equipment and employ noise preventative measures (e.g., screening, muffling, timing, pre-notification of affected parties) to be employed. o Notify nearby residents and stakeholders before blasting or piling. o No amplified music will be allowed on the site. The use of radios, tape recorders, compact disc	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period.	▪ Evidence of pollution. ▪ Review periodic results from environmental monitoring. ▪ Inspection of project area (photographic records). ▪ Complaints register. ▪ Corrective action records.	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
players, television sets etc. will not be permitted unless at a level that does not serve as an intrusion to adjacent landowners. ▪ Dust – o Implement dust suppression measures in active work areas and on exposed surfaces where dust generation occurs. o Limit unnecessary disturbance of exposed areas and keep construction footprints to the minimum required. o Ensure construction vehicles and equipment operate in a manner that minimises dust generation on site roads and disturbed areas. o Investigate and address air quality complaints associated with dust generation o Speed limits to be strictly adhered to. o All vehicles and machinery used at the site are to be in good working condition and fitted with appropriate emission controls. ▪ Lights – o Prior to construction the position and type of lighting will be planned to ensure that unnecessary light pollution will be eliminated. o All lighting installed on site must not lead to unacceptable light pollution to the surrounding community and natural environment (e.g. use of down-lighters). ▪ Cement – o Cement mixing shall take place on an impervious surface (e.g. cement mixing pit). o Waste concrete and cement sludge shall be removed on a regular basis (prevent overflowing) and shall be disposed of at a suitable facility.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Unused cement bags will be stored in an area not exposed to the weather and packed neatly to prevent leakage of cement. ○ Used cement bags will be stored so as to prevent windblown dust and potential water contamination. Used bags will be disposed of adequately at a licenced waste disposal facility. ○ Concrete transportation will not result in spillage. ○ Cleaning of equipment and flushing of mixers will not result in pollution, with all contaminated wash water entering the waste water collection system. ○ To prevent spillage onto roads, ready mix trucks will rinse off the delivery shoot into a suitable sump prior to leaving the site. ○ Suitable screening and containment will be in place to prevent windblown contamination from cement storage, mixing, loading and batching operations. ○ All visible remains of excess concrete will be physically removed on completion of the plastering or concrete pouring and disposed of in an acceptable manner.				

13.2.22 Management of Terrestrial Biodiversity

Management Objectives	▪ Maintain the integrity of remaining natural terrestrial habitats within the Conservation Area and adjacent to the site. ▪ Prevent re-establishment and spread of invasive alien plants. ▪ Manage impacts to protected flora and fauna species that may be encountered within the construction domain. ▪ Control invasive alien plants and noxious weeds.
Targets	▪ Establishment of a Conservation Area. ▪ No further clearing or disturbance beyond the authorised footprint. ▪ No unpermitted disturbance to protected flora and fauna species. ▪ No recorded faunal mortalities associated with infrastructure.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Terrestrial Ecology Impact Assessment: o Avoid disturbance to areas identified as having high terrestrial ecological sensitivity wherever feasible. o Conduct a detailed pre-construction ecological walkdown to identify species requiring relocation and determine permit requirements from CapeNature and DFFE. o Obtain all necessary permits prior to the relocation, rescue or translocation of protected species. o Restrict all construction activities, vehicles, material stockpiles and contractor activities to the approved development footprint to minimise secondary disturbance. o Minimise the extent of vegetation clearance and habitat disturbance to reduce the area requiring rehabilitation. o Remove all alien invasive vegetation from disturbed areas.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance. ▪ Specialist – monitoring.	▪ From pre-construction phase up to end of defects liability period (as relevant for specific management actions).	▪ Pre-construction survey report. ▪ Conservation Management Plan. ▪ Inspection of project area (photographic records). ▪ Encroachment of invasive alien plants and noxious weeds. ▪ Successful rehabilitation. ▪ Approved invasive alien plant management and monitoring plan.	▪ Monthly

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Allow cleared alien-infested areas to recover naturally and revegetate with appropriate climax fynbos species. ○ Monitor rehabilitated areas for erosion and implement corrective measures where required. ○ Where natural revegetation is slow, grub and replant disturbed areas using indigenous species appropriate to the region. ○ Where relocation of fynbos species is not feasible, collect seed and/or propagules for use in rehabilitation and revegetation programmes. ○ Protect species of conservation concern identified during the assessment, including *Hermannia lavandulifolia*, through avoidance, permitting and habitat management measures. ○ Demarcate the Conservation Area as a no-go area prior to commencement of construction activities. ○ Preferably demarcate the Conservation Area through pegging and signage rather than impermeable fencing to allow fauna to move into refuge areas where appropriate. • Develop a Conservation Management Plan for the conservation of the Conservation Area during the relevant phases of the Project. ○ Should period fire as a vegetation management measure be considered as part of the management measures outlined in the Conservation Management Plan, consult the Southern Cape Fire Protection Agency.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
• The following mitigation measures are derived from the Avifauna Impact Assessment: o Where feasible, commence vegetation clearing and construction activities during the autumn or winter months (preferably May to September) to minimise disturbance to breeding birds. o Limit the development footprint to areas of low and very low ecological sensitivity as far as practicable. o Ensure all construction activities remain strictly within the approved development footprint. o Support and implement the proposed conservation area to provide refuge habitat and reduce impacts on avifauna. o Minimise vegetation clearing and retain as much existing natural vegetation and ground cover as possible, especially within the Solar PV area. o Retain and stockpile topsoil from cleared areas for rehabilitation and landscaping purposes. o Use only indigenous plant species native to the area for rehabilitation and landscaping. o Develop and implement a site-specific invasive alien plant management and monitoring plan, prepared by a suitably qualified specialist. o Appoint a specialist contractor to remove invasive alien vegetation from disturbed areas. o Remove alien plant seedlings and saplings as they become established. o Dispose of alien vegetation at an authorised disposal facility and prohibit dumping on or off site.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Ensure all construction vehicles, machinery and equipment are free of plant material before entering the site. ○ Prohibit the handling, capture, relocation, disturbance, injury or killing of birds and other wildlife by construction personnel, unless undertaken by suitably qualified and authorised specialists. ○ Prohibit hunting, snaring, trapping or persecution of wildlife, including species perceived to be vermin. ○ Enforce strict speed limits on site and require drivers to remain vigilant for birds and other wildlife crossing roads and access routes. ○ Minimise construction lighting as far as possible. ○ Where lighting is required, utilise lighting with minimal ultraviolet emissions and low attraction to insects. ○ Prevent upward light spill by using appropriately shielded lighting directed downward at low angles. ○ Minimise the height of lighting structures to reduce light pollution impacts. ○ Inspect and maintain all vehicles and machinery regularly to prevent leaks. ○ Immediately contain and remediate any fuel, oil or chemical spillages. ○ Implement appropriate stormwater management measures throughout the construction phase.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Locate construction camps and associated infrastructure outside areas of medium ecological sensitivity. ○ Prohibit the washing of construction vehicles and equipment on site. ○ Prohibit littering and the dumping of waste, including cigarette butts, in natural areas. ○ Provide adequate waste storage and disposal facilities for construction personnel.				
▪ *See requirements for Management of Waste, Management of Water, Management of Ablution Facilities, Management of Storage and Handling of Non-Hazardous and Hazardous Material, and Management of Workshop and Equipment.*				

13.2.23 Management of Watercourses and Aquatic Biodiversity

Management Objectives	▪ Ensure that the watercourses are protected and incur minimal negative impact to their resource quality (flow, water quality, habitat and aquatic biota).
Targets	▪ No impacts to water quality and aquatic health of watercourses as a result of construction activities. ▪ No visible evidence of erosion caused by the Project's activities. ▪ No dewatering of sediment-laden or cement laden water into watercourses.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Aquatic Ecology Impact Assessment: ○ Restrict all construction activities to the approved development footprint to minimise secondary disturbance and reduce the extent of rehabilitation required.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ From pre-construction phase up to end of defects liability period (as relevant for specific	▪ Visible evidence of pollution of watercourses. ▪ Destabilisation (erosion) of watercourses, directly	▪ Monthly. ▪ Quarterly vegetation rehabilitation surveys.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Remove all alien invasive vegetation from disturbed areas. ○ Allow cleared alien-infested areas to recover naturally and revegetate with appropriate climax fynbos species. ○ Monitor rehabilitated areas for erosion and implement corrective measures where required. ○ Where natural revegetation is slow, grub and replant disturbed areas using indigenous species appropriate to the region. ○ Implement suitable stormwater management measures to control runoff and reduce erosion during construction. ○ Install and maintain stormwater detention ponds or similar infrastructure to trap sediment and manage runoff from disturbed areas. ○ Prevent accidental spillages and leakages of fuels, oils, hydrocarbons, cement and other pollutants. ○ Ensure spill prevention and response measures are implemented and that spills are immediately contained and remediated. ○ Prohibit vehicle refuelling, servicing and maintenance activities in close proximity to watercourses. ○ Implement appropriate waste management measures, including the provision of waste receptacles and the prohibition of littering and waste burning.		management actions).	attributable to Project activities. ▪ Successful rehabilitation. ▪ Inspection of project area (photographic records). ▪ Approved alien invasive plant management plan.	

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Maintain ablution facilities in good working order and ensure sewage, wastewater and hazardous waste are disposed of at appropriately licensed facilities. ▪ *See requirements for Management of Waste, Management of Water, Management of Ablution Facilities, Management of Storage and Handling of Non-Hazardous and Hazardous Material, Management of Workshop and Equipment, Management of Groundwater and Management Terrestrial Biodiversity.*				

13.2.24 Management of Groundwater

Management Objectives	▪ Protect shallow and deep groundwater resources from contamination associated with construction activities, hazardous substances and accidental spillages. ▪ Maintain natural groundwater flow pathways and minimise disruption to shallow groundwater systems and associated wetland hydrological functioning. ▪ Prevent deterioration of groundwater and wetland water quality through effective stormwater, erosion and sediment control measures. ▪ Monitor groundwater, wetland conditions and construction activities to identify and address potential groundwater-related impacts.
Targets	▪ No uncontrolled release of fuels, oils, chemicals, sewage or other contaminants to the receiving environment. ▪ No significant deterioration in groundwater or wetland water quality attributable to construction activities. ▪ No significant alteration of shallow groundwater flow pathways or wetland hydrological functioning resulting from construction activities. ▪ Groundwater, wetland and stormwater management measures implemented and maintained throughout the construction phase.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Geohydrology Impact Assessment: o Natural drainage pathways towards the wetland must be maintained where practicable. o Appropriate stormwater, erosion and sediment-control measures must be implemented during construction. o Fuels, chemicals and other potentially contaminating materials must be appropriately stored and handled and spills must be promptly contained and remediated. o The wetland should be regularly inspected during construction for changes in flow, sedimentation and water quality, with corrective measures implemented where required. o Good construction practices and due diligence must be followed to prevent the release of hydrocarbons, chemicals and other potential contaminants. o Hazardous substances should be stored appropriately, and spill response equipment should be available on site. o Excavations and below-ground infrastructure must be designed to minimise disruption of shallow groundwater flow. Where shallow groundwater is encountered, natural flow pathways must be maintained or reinstated following construction.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ From pre-construction phase up to end of defects liability period (as relevant for specific management actions).	▪ Inspection of project area (photographic records). ▪ Water Quality Sample Results and Reports. ▪ Approved Stormwater Management Plan.	▪ Monthly

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Unnecessary disturbance of low-permeable clay layers should be avoided and any required dewatering should be avoided where possible. ○ Areas surrounding the major excavations should be inspected for changes in groundwater levels and wetland flow. Remedial measures should be implemented where significant changes are observed. ▪ Monitoring of Groundwater should be conducted in accordance with the Groundwater Management Plan (refer to **Section 8** and contained in **Annexure 3**).				

13.2.25 Management of Heritage & Palaeontological Features

Management Objectives	▪ Comply with legislative requirements with regards to archaeological, palaeontological, cultural resources and graves. ▪ Preserve and appropriately manage new discoveries made during construction, in accordance with the National Heritage Resources Act (Act No. 25 of 1999) (NHRA).
Targets	▪ No archaeological, palaeontological, cultural resources or graves to be damaged during construction.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Archaeological Walkdown Report: ○ If during ground clearance or construction, any archaeological material or human graves are uncovered, work in that area should be stopped immediately and the ECO must report this to Heritage Western Cape. The heritage resource may require inspection by the heritage authorities,	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance. ▪ Heritage specialists - chance finds.	▪ From pre-construction and throughout the duration of the construction period.	▪ Records of chance finds. ▪ Permits on record (if required). ▪ Inspection of barricading and visible signage	▪ Monthly / when chance finds occur.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
and it may require further mitigation in the form of excavation and curation in an approved institution. ▪ The following mitigation measures are derived from the Palaeontology Desktop Assessment: o If any fossil material is exposed during operations, the Chance Find Protocol must be implemented without delay (refer to Annexure 2). Fossil discoveries must be protected in situ and reported promptly to the Heritage Western Cape. o Mitigation measures, including recording and collection by a professional palaeontologist, may be required. o Prior to the collection of any fossil material, the appointed specialist must obtain a fossil collection permit from SAHRA. All collected material must be curated in an approved repository (such as a museum or university), and all fieldwork and reporting must adhere to the minimum standards for palaeontological impact assessments as set out by SAHRA (2012). ▪ Include an information section on cultural resources in the Environmental Training given to contractors involved in surface earthmoving activities. ▪ The Heritage Western Cape should be contacted if any heritage objects are identified during earth-moving activities and all development should cease until further notice. ▪ Under no circumstances may any heritage material be destroyed, inundated, collected, or removed from site			(photographic records). ▪ Visual inspections (photographic records). ▪ Proof of training.	

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
unless under direction of Heritage Western Cape and a heritage specialist. ▪ Should any remains be found on site that is potentially human remains, the South African Police Service (SAPS) should also be contacted. No SAPS official may disturb or exhume such remains, without the necessary permission from Heritage Western Cape. ▪ Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone, asphalt, etc.) must be obtained in a sustainable manner and in compliance with the heritage legislation. ▪ Failure to comply with the requirements of the NHRA could lead to legal action being instituted against the applicant. ▪ If significant fossil remains or trace fossils are discovered during construction, either on the surface or exposed by excavations, the Heritage Western Cape Chance Finds Procedure must be implemented (refer to Annexure 1).				

13.2.26 Management of Emergency Procedures

Management Objectives	▪ Minimise environmental impacts associated with emergency procedures.
Targets	▪ Approved emergency response procedure. ▪ No site fires to be caused by construction activities and workers.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The Contractor shall compile a detailed Emergency Response Plan for the construction phase.	▪ Contractor to implement management actions.	▪ Throughout the duration of the construction period.	▪ Approved Contractor's Emergency Response Plan.	▪ Once-off – Emergency Response Plan approval.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The Contractor's Emergency Response Plan is to be aligned with the Emergency Response Plan of PetroSA. ▪ Fire – o Comply with the National Veld and Forest Fire Act (No. 101 of 1998) and National Veld and Forest Fire Bill (B122B of 1998). o All contact details of the local fire brigade to be listed in the emergency telephone numbers. o Proper emergency response procedure shall be in place for dealing with fires. o Burning of waste is not permitted. o Suitable precautions shall be taken (e.g. suitable fire extinguishers, water bowsers, welding curtains) when working with welding or grinding equipment. o All fire control mechanisms (fire-fighting equipment) shall be routinely inspected by a qualified investigator for efficacy thereof and shall be approved by local fire services. o All staff on site shall be made aware of general fire prevention and control methods, and the name of the responsible person to alert to the presence of a fire. o No fires are allowed on site. o Dedicated smoking areas to be provided. ▪ Accidental Leaks and Spillages – o Proper emergency response procedure shall be in place for dealing with spills and leaks. o Ensure that the necessary materials and equipment for dealing with spills and leaks are available on site, where practicable.	▪ PM to approve Emergency Response Plan. ▪ EO and ECO - to monitor compliance.		▪ Signage displayed. ▪ Incident Register and Report. ▪ Inspection of project area (photographic records).	▪ Monthly – compliance with management actions.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Remediation of the spill areas shall be undertaken to the satisfaction of the EO or PM. ○ In the event of a hydrocarbon spill, the source of the spillage shall be isolated and contained. The area shall be cordoned off and secured. The Contractor shall ensure that there is always appropriate absorbent material readily available to absorb, breakdown and where possible, encapsulate minor hydrocarbon spillages. ○ All staff on site shall be made aware of actions to be taken in case of a spillage. ○ Provide contact details of person and emergency services to be notified in a case of spillages – signage to be displayed at strategic points within the construction area (e.g. workshop, fuel storage area, hazardous material containers). ○ All major incidents (i.e. uncontrolled release of a hazardous substance, including from a major emission, fire or explosion, that causes, has caused or may cause significant harm to the environment, human life or property) to be reported to DEADP and/or other relevant authorities.				

13.2.27 Management of Blasting (if required)

Management Objectives	▪ Minimise environmental impacts associated with blasting.
Targets	▪ Compliance with blasting-related legislation and standards. ▪ No blasting-related impacts to private property or human health.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Prior to commencing with blasting activities, the blasting Contractor should submit a Method Statement which should comply with the Explosives Regulations (2003) and all relevant SANS standards and health and safety standards for mitigating blasting. ▪ Conduct pre-blast surveys of nearby structures. ▪ The Contractor shall employ industry standard methods to control the impact of blasting and limit the risk of damage to buildings and structures by reducing blast vibrations induced in the rock mass, eliminating fly rock and limiting air-blast and noise to acceptable levels. ▪ Provide notification in advance of blasting schedules. ▪ Blast mats should be used wherever fly-rock may result in damage to any infrastructure or where it could result in any harm. ▪ Blasting operations should be controlled to ensure sound pressure levels are kept below the generally accepted 'no damage' level. ▪ All explosives shall be transported, stored and handled in accordance with applicable laws and good design engineering and constructions practices. ▪ Blasting operations are to be strictly controlled with regard to the size of explosive charge in order to minimise noise and air blast, and timings of explosions. The number of blasts per day should be limited, blasting should be undertaken at the same times each day and no blasting should be allowed at night. ▪ Maintain minimum buffer distances from sensitive receptors. ▪ Undertake monitoring at sensitive locations. ▪ Conduct post-blast inspections.	▪ Contractor to implement management actions. ▪ Contractor's Safety Officer and ECO - to monitor compliance. ▪ Client / Safety Agent to audit Contractor in terms of OHS requirements	▪ Prior to, during and after blasting events.	▪ Approved Health and Safety Plan. ▪ Signage displayed. ▪ Incident Register and Report. ▪ Inspection of project area (photographic records).	▪ Once-off – Health and Safety Plan approval. ▪ Monthly – compliance with management actions.

13.2.28 Management of Socio-Economic Impacts

Management Objectives	▪ Minimise adverse impacts to surrounding landowners, businesses and communities. ▪ Maximise job creation and promote local economic participation during construction. ▪ Prevent safety incidents or health risks to surrounding landowners, businesses and communities.
Targets	▪ Employment targets to be specified. ▪ Employment records reflect local participation. ▪ Zero public injury or incident related to project activities.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	**Frequency**
▪ The following mitigation measures are derived from the Socio-Economic Impact Assessment: o Prioritise the recruitment of local labour, particularly for semi-skilled and unskilled positions, where suitably qualified candidates are available. o Employ labour-intensive construction methods where feasible to maximise local employment opportunities. o Sub-contract local construction companies, particularly SMMEs and BBBEE-compliant enterprises, where practicable. o Utilise local suppliers and service providers where feasible, including transport, catering and other support services. o Coordinate with the local municipality and relevant stakeholders to inform local communities of employment opportunities associated with the Project. o Establish a local skills database or skills desk to identify and source suitably qualified local labour. o Establish a Monitoring Forum prior to construction, comprising community representatives, local	▪ Contractor to implement management actions. ▪ SO – manage stakeholder relations and the GRM. ▪ Client / Safety Agent to audit Contractor in terms of OHS requirements.	▪ From pre-construction and throughout the duration of the construction period.	▪ Incident Register and Report. ▪ Inspection of project area (photographic records). ▪ Employment records. ▪ Skills training attendance records. ▪ Documented GRM. ▪ Proof of communication. ▪ Related entries into Public Complaints Register. ▪ Construction Phase Code of Conduct.	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
Councillors, landowners, farmers, the contractor and other relevant stakeholders to facilitate communication and monitor the implementation of mitigation measures. o Develop and enforce a construction-phase Code of Conduct for all workers. The Code should address appropriate behaviour, prohibit discrimination, harassment and gender-based violence, and include disciplinary measures for non-compliance. o Implement HIV/AIDS, TB and STI/STD awareness and education programmes during worker induction and through regular toolbox talks. o Facilitate access to voluntary counselling and testing services, TB screening programmes and referral pathways to local healthcare facilities. o Provide free and discreet access to condoms at construction sites and worker accommodation facilities. o Manage and monitor worker movement on and off site and, where applicable, facilitate regular travel arrangements for non-local workers. o Prohibit non-essential overnight accommodation on site, except where required for security or critical operational purposes. o Promote fair and equitable recruitment practices and encourage the employment of both women and men in suitable construction roles. o Provide a safe and respectful working environment for all workers.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Ensure gender-sensitive site facilities and working conditions, including appropriate PPE, sanitation facilities and safe transport arrangements. ○ Provide appropriate skills development, training and on-the-job learning opportunities to enhance long-term employability. ○ Implement suitable dust suppression and dust management measures throughout the construction phase. ○ Restrict construction activities to normal working hours (07:00-17:00), unless otherwise agreed, and communicate any deviations to affected stakeholders in advance. ○ Implement all traffic-related mitigation measures contained in the Traffic Study. ▪ *See requirements for Stakeholder Communication, Management of Security, Managemnet of Health and Safety, Management of Ablution Facilities, Management of Labour Force, Management of Construction Camp and Management of Pollution Generation Potential.*				

13.2.29 Management of Health and Safety

Management Objectives	▪ Provide a safe working environment to construction workers and the public.
Targets	▪ Approved Health and Safety Plan. ▪ No incidents. ▪ Compliance with the OHS Act (Act No. 85 of 1993), Construction Regulations (2014) and other relevant regulations.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Dedicated OHS system to be implemented by the Contractor. ▪ The Contractor shall compile a Health and Safety Plan, prepared in accordance with the Health and Safety Specification, for approval prior to the commencement of work. These requirements are aligned with the Construction Regulations (2014). ▪ Undertake a hazard identification and risk assessment and identify preventive measures and safe work procedures. ▪ Fencing and barriers will be in place in accordance with the OHS Act (Act No. 85 of 1993). ▪ Applicable notice boards and hazard warning notices will be put in place and secured. ▪ Night hazards will be suitably indicated (e.g. reflectors, lighting and traffic signage). ▪ Emergency contact details will be prominently displayed. ▪ All construction personnel shall be clearly identifiable. All employees will also be issued with employee cards for identification purposes. ▪ All workers will be supplied with the required PPE as per the OHS Act (Act No. 85 of 1993). ▪ Maintain access control to prevent access of the public to the construction areas. ▪ The Contractor shall establish HIV/AIDs awareness programmes at the construction camp. ▪ Put in place a monitoring system to monitor health risks throughout the life of the project. ▪ Conduct basic safety awareness training with construction workers. ▪ Provide potable water and sanitation services to workers.	▪ Contractor to implement management actions. ▪ Contractor's Safety Officer and ECO - to monitor compliance. ▪ Client / Safety Agent to audit Contractor in terms of OHS requirements	▪ From pre-construction and throughout the duration of the construction period.	▪ Approved Health and Safety Plan. ▪ Signage displayed. ▪ Incident Register and Report. ▪ Inspection of project area (photographic records). ▪ Construction Phase Code of Conduct. ▪ Comprehensive HIV/AIDS, TB, and STI/STD awareness programme	▪ Once-off – Health and Safety Plan approval. ▪ Monthly – compliance with management actions.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Ensure adequate control of communicable diseases. ▪ The following mitigation measures are derived from the Socio-Economic Impact Assessment: o Assess, in consultation with the local municipality, whether nearby towns and settlements have the capacity to accommodate the anticipated number of construction workers, and consider a well-managed construction camp if local capacity is inadequate, to minimise unmanaged interaction and associated HIV, TB, and STI/STD risks. o Require contractors to implement a locals-first recruitment policy for semi- and low-skilled positions to reduce the number of non-resident workers and associated social and health risks, including the transmission of HIV, TB, and STIs/STDs. o Establish a Monitoring Forum before construction, including community representatives, Councillors, farmers, and the contractor, to oversee construction activities, monitor HIV, TB, and STI/STD-related risks, and track implementation of mitigation measures. o Develop and enforce a construction-phase code of conduct, in consultation with the Monitoring Forum, that clearly prohibits high-risk behaviour, including sexual exploitation, harassment, and discrimination against people living with HIV, TB, or STIs/STDs, with sanctions for non-compliance that remain consistent with labour legislation.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Implement a comprehensive HIV/AIDS, TB, and STI/STD awareness programme for all workers at induction and through regular toolbox talks, covering prevention, symptoms, testing, treatment, and the importance of adherence. ○ Facilitate confidential voluntary counselling and testing (VCT) for HIV, together with regular TB symptom screening and sexual health awareness, in partnership with local health facilities, and ensure clear referral pathways for diagnosis and treatment. ○ Ensure free, discreet access to condoms at the construction site, worker accommodation, and key local venues, coupled with ongoing education to encourage correct and consistent use and reduce the risk of HIV and STI/STD transmission. ○ Manage and monitor worker movement on and off site through organised transport, and allow non-local workers to return home regularly, for example on weekends or agreed cycles, thereby limiting the formation of risky, transient relationships that may increase the transmission of HIV, TB, and STIs/STDs. ○ Prohibit non-essential overnight stays on site, except for critical or security staff, to support effective management of worker behaviour and reduce the potential for unregulated, high-risk interactions with nearby communities.				

13.2.30 Management of Reinstatement and Rehabilitation

Management Objectives	▪ Adequate reinstatement and rehabilitation of construction area (outside permanent development footprint).
Targets	▪ Complete site clean-up. ▪ Reinstate and rehabilitate all areas disturbed by construction activities.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The areas affected by construction activities, which will not form part of the development footprint shall be reinstated and rehabilitated. ▪ Cordon off areas that are under rehabilitation as no-go areas. ▪ Removal of structures and infrastructure - o Clear and completely remove from site all construction plant, equipment, storage containers, temporary fencing, temporary services and fixtures. o Rehabilitate all temporary access roads utilised during construction which are not earmarked for use during the operational phase, and do not form part of the development footprint. ▪ Inert waste and rubble - o Clear the site of all inert waste and rubble, including spoil material, surplus rock, foundations and batching plant aggregates. After the material has been removed, the site shall be re-instated and rehabilitated. ▪ Domestic waste - o Remove from site all domestic waste and dispose of in the approved manner at a licenced waste disposal site. ▪ Hazardous waste and pollution control - o Remove from site all pollution containment structures.	▪ Contractor to implement management actions. ▪ EO and ECO - to monitor compliance.	▪ Throughout the duration of the construction period up to end of defects liability period.	▪ Inspection of project area (photographic records).	▪ Monthly.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Remove from site all temporary sanitary infrastructure and waste water disposal systems. Take care to avoid leaks, overflows and spills and dispose of any waste in the approved manner. ▪ Final shaping - ○ Make safe all excavations by backfilling and grading, as required. ○ Monitor backfilled areas for subsidence (as the backfill settles) and fill depressions using available material. ○ Ensure that no excavated material or stockpiles are left on site and that all material remaining after backfill is landscaped to blend in with the surrounding landscape. ▪ Topsoil replacement and soil amelioration - ○ Execute top soiling activity prior to the rainy season or any expected wet weather conditions. ○ Execute topsoil placement only after all construction work has ceased. ○ Replace topsoil to the original depth. ○ Place topsoil in the same area from where it was stripped. ○ Do not use topsoil suspected to be contaminated with the seed of alien vegetation. Alternatively, the soil is to be appropriately treated. ○ Ensure that stormwater run-off is not channelled alongside the gentle mounding, but that it is taken diagonally across it. ○ Shape remaining stockpiled topsoil not utilised elsewhere in an acceptable manner so as to blend in with the local surrounding area.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ After topsoil placement is complete, spread available stripped vegetation randomly by hand over the top-soiled area. ▪ Ripping and scarifying - ○ Rip and/or scarify all areas following the application of topsoil to facilitate mixing of the upper most layers. Whether ripping and/or scarifying is necessary it will be based on the site conditions immediately before these works commence. ○ Rip and/or scarify all disturbed (and other specified) areas of the construction site, including temporary access routes and roads, compacted during the execution of the works. ○ Rip and/or scarify along the contour to prevent the creation of down-slope channels. ○ Do not rip and/or scarify areas under wet conditions, as the soil will not break up. ▪ Planting - ○ All plant species for use by the project must be reviewed and approved by qualified specialists prior to use on site. ○ Revegetation must match the vegetation type which previously existed, unless otherwise indicated by a suitable specialist. ○ Although the use of indigenous vegetation is promoted, where there is a risk of soil erosion (e.g. steep slopes) a suitable specialist must be consulted to determine the most appropriate stabilisation measures. ○ All planting work is to be undertaken by suitably experienced personnel, making use of the appropriate equipment.				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ After planting, each plant must be well watered, adding more soil upon settlement if necessary. ▪ Grassing - ○ Suitably trained personnel must undertake grassing by making use of the appropriate equipment and indigenous grass species, as specified by the qualified specialists. ○ Sodding may be done at any time of the year, but seeding must be done by sowing appropriate seed mixtures at the most suitable time under the guidance of a qualified specialist.				

13.3 Operational Phase

Where relevant, all management actions will be carried forward from the construction phase to the operational phase. Specific management measures for the operational phase are as follows:

13.3.1 Management of Terrestrial Biodiversity

Management Objectives	▪ Ensure long-term stability and functionality of the Conservation Area and rehabilitated areas. ▪ Promote sustainable indigenous vegetation establishment in areas disturbed by construction and operational activities (outside permanent development footprint on authorised site). ▪ Minimise disturbance, displacement, injury and mortality of avifauna associated with operational activities, lighting, noise and infrastructure. ▪ Protect avifaunal habitat and prevent pollution or degradation of habitats utilised by bird species within and surrounding the Project area.
Targets	▪ No visible erosion gullies or instability within Conservation Area. ▪ Indigenous species dominate (>90%) in rehabilitated areas. ▪ 100% of detected invasive alien plants cleared. ▪ Successful management of the conservation area including the presents of protected species such as *Hermannia lavandulifolia*. ▪ No significant increase in avifaunal mortality associated with Project infrastructure, and all bird mortalities recorded and reported. ▪ No uncontrolled pollution, habitat degradation or unnecessary disturbance of avifaunal habitat within the Conservation Area and surrounding natural areas.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Develop a Conservation Management Plan for the conservation of the Conservation Area during the relevant phases of the Project ▪ The following mitigation measures are derived from the Terrestrial Ecology Impact Assessment:	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance.	▪ Operational Phase.	▪ Inspection records. ▪ Proof of training ▪ Performance records.	▪ Monthly. ▪ ECO at a minimum every 6 months for the first 2 years and then yearly

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Maintain and manage the proposed 15 ha Conservation Area to protect important habitat and species of conservation concern. ○ Use the Conservation Area to provide long-term habitat for species identified during the assessment and those highlighted by the DFFE Screening Tool, including sensitive bird, butterfly, mammal and plant species. ○ Continue the removal and control of alien invasive vegetation within the Conservation Area and rehabilitated areas. ○ Maintain rehabilitated areas in a stable condition and monitor for erosion. ○ Implement corrective rehabilitation where vegetation recovery is unsuccessful. ○ Maintain habitat connectivity between the Conservation Area and surrounding natural habitats. ○ Incorporate the Conservation Area into broader municipal and regional conservation planning initiatives where feasible. ○ Maintain the Conservation Area and rehabilitated areas in a natural ecological condition throughout the operational life of the Project. ○ Implement ongoing monitoring and management of rehabilitated and conservation areas to ensure successful recovery and persistence of indigenous vegetation communities.	▪ ECO – to monitor compliance ▪ Relevant specialist – Monitor compliance to Conservation Management Plan		▪ Conservation Management Plan. ▪ Stormwater Management Plan. ▪ Approved invasive alien plant management and monitoring plan.	for 5 years thereafter. ▪ Specialist – in accordance with the Conservation Management Plan

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Avifaunal Impact Assessment: o Conduct post-construction monitoring to ascertain if collisions of birds with the panels becomes a problem. o If collisions become a problem, bird diverters / visual deterrents that can be installed around the solar tables to break up the continuity and deter birds from perceiving the panels to be open water must be investigated / researched using the latest available information from the global solar industry. o Tracking panels are preferred to fixed panels as the movement of the panel will aid in altering the light reflected. o Record all bird mortalities during the operational phase of the project. The site should be inspected on a regular basis, for example during routine maintenance, and any bird mortalities recorded, including probable cause of death. The results must be reported to BirdLife SA. o A formal stormwater management plan must be incorporated into the development design for each component. o Dirty water from the raceway must be treated and cleaned (e.g. solids and hydrocarbons removed) before being released into the environment. o If possible, panels should be cleaned using water that is clear of detergents only (e.g. potable water or borehole water). The use of grey water should				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
be avoided. Should the need arise to clean the panels with detergents, then biodegradable detergents are preferred. Care must be taken not to allow the detergents to accumulate in the soil. Detergents must not be used in the rainy season when they can be washed into the downstream watercourses. o All maintenance vehicles must be checked for leaks and serviced on a regular basis. o Any spillage must be dealt with rapidly and in the most appropriate manner. o Dumping of solid waste in natural areas, including cigarette butts and litter by operational staff must be prohibited. o Appropriate solid waste disposal and ablution facilities must be provided for operational. o Lighting must not include those that fall within the white spectrum or emit ultra-violet light such as high-pressure sodium or mercury lamps. Light that is emitted at one wavelength, contains no ultraviolet (UV) light, and has a low attraction to insects, such as low-pressure sodium lamps, is preferred. o Upward lighting must be avoided as far as possible to minimise light pollution. Light can be restricted by fitting shields that direct the light below the horizontal plane, at preferably an angle less than 70 degrees. Limiting the height of lighting columns				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
and directing light at a low level reduces the ecological impact of the light.				

13.3.2 Management of Watercourses and Aquatic Biodiversity

Management Objectives	▪ Protect the ecological integrity and functioning of surrounding watercourses and aquatic habitats by preventing erosion, sedimentation and hydrological alterations. ▪ Prevent the pollution and contamination of surface water resources through effective stormwater and operational environmental management
Targets	▪ No uncontrolled discharge of contaminated runoff, hydrocarbons, sediment or pollutants into surrounding watercourses or aquatic habitats. ▪ Stormwater management infrastructure remains functional and effective in controlling runoff, erosion and sedimentation throughout the operational life of the Project.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Aquatic Ecology Impact Assessment: o Maintain and manage stormwater detention ponds and associated stormwater infrastructure to ensure effective runoff containment. o Prevent uncontrolled runoff from leaving the site. o Contain and manage runoff that may contain hydrocarbons or other pollutants associated with raceway activities. o Continue the removal and control of alien invasive vegetation within conservation and rehabilitated areas. o Maintain rehabilitated areas in a stable condition and monitor for erosion.	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance. ▪ ECO – to monitor compliance ▪ Relevant specialist – Monitor compliance to Conservation Management Plan	▪ Operational Phase.	▪ Inspection records. ▪ Proof of training ▪ Performance records. ▪ Conservation Management Plan. ▪ Stormwater Management Plan. ▪ Approved invasive alien plant management	▪ Monthly. ▪ Specialist – in accordance with the Conservation Management Plan

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Promote and maintain habitat connectivity between natural areas on and surrounding the site. ○ Support the integration of conservation areas with broader municipal and regional conservation planning initiatives where feasible. ○ Implement ongoing pollution prevention measures associated with raceway operations. ○ Prevent accidental spillages and leakages of fuels, oils, hydrocarbons and other pollutants associated with operational activities. ○ Maintain appropriate waste management practices, including the provision of waste receptacles and the prohibition of littering and waste burning. ○ Maintain ablution facilities and ensure wastewater and hazardous waste are disposed of by appropriately licensed service providers. ○ Monitor and manage stormwater quality to minimise impacts on downstream aquatic environments.			and monitoring plan.	

13.3.3 Management of Groundwater

Management Objectives	▪ Protect the quality of shallow and deep groundwater resources through effective pollution prevention and environmental management practices. ▪ Maintain groundwater recharge processes, natural flow pathways and associated wetland hydrological functioning throughout the operational life of the Project. ▪ Prevent groundwater contamination resulting from stormwater runoff, hydrocarbons, hazardous substances and other operational activities. ▪ Implement ongoing groundwater and wetland monitoring to identify and manage any unforeseen impacts.
Targets	▪ No measurable deterioration in groundwater quality attributable to Project activities. ▪ No uncontrolled discharge of contaminated stormwater, hydrocarbons or hazardous substances to groundwater, wetlands or watercourses. ▪ No significant alteration of groundwater flow patterns or wetland hydrological functioning resulting from operational infrastructure. ▪ Groundwater and wetland monitoring undertaken in accordance with the approved monitoring programme and any identified issues addressed through corrective action.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Geohydrology Impact Assessment: o Natural drainage pathways towards the wetland must be maintained where practicable. o Fuels, chemicals and other potentially contaminating materials must be appropriately stored and handled and spills must be promptly contained and remediated. o Good operation practices and due diligence must be followed to prevent the release of hydrocarbons, chemicals and other potential contaminants.	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance. ▪ ECO – to monitor compliance.	▪ Operation phase.	▪ Inspection of project area (photographic records). ▪ Water Quality Sample Results and Reports. ▪ Approved Stormwater Management Plan.	▪ Quarterly

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
○ Hazardous substances should be stored appropriately, and spill response equipment should be available on site. ▪ Monitoring of Groundwater should be conducted in accordance with the Groundwater Management Plan (refer to **Section 8** and contained in **Annexure 3**).				

13.3.4 Management of Noise on surrounding receptors

Management Objectives	▪ Minimise operational noise impacts associated with motorsport activities, spectator events, traffic and supporting infrastructure. ▪ Ensure compliance with applicable noise legislation, noise limits and recommended operational noise management measures. ▪ Implement ongoing noise monitoring and adaptive management to reduce potential impacts on surrounding noise-sensitive receptors. ▪ Promote effective stakeholder engagement and management of noise-related concerns.
Targets	▪ Operational noise levels remain within applicable regulatory limits and noise rating levels at surrounding noise-sensitive receptors. ▪ No increase in noise levels exceeding recognised disturbance thresholds at surrounding receptors without implementation of additional mitigation measures. ▪ All racing vehicles comply with applicable vehicle noise emission requirements prior to participating in events. ▪ A noise monitoring and complaints management system implemented and maintained for the operational life of the Project. ▪ No justified and unresolved noise complaints associated with the operation of the facility.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ The following mitigation measures are derived from the Noise Impact Assessment: ○ Source Limits (Vehicle Technical Regulations – e.g. Standards as per Racing SA): Imposing strict	▪ Operator to implement management actions.	▪ Operation phase.	▪ Test results of vehicle noise testing.	▪ Monthly review of noise management

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
decibel limits (e.g., 95–105 dB) and requiring high-efficiency exhaust silencers or mufflers. o Earth Berms: Large mounds of earth (soil bunds) act as heavy, dense barriers that block the direct line-of-sight between the track and the closest NSR. When constructed with an acoustically soft (grass-covered) surface, they absorb sound better than hard walls and are less affected by wind-driven noise refraction. o Sunken Carriageways (Topography Changes): Excavating the track so it sits in a trench below ground level (subject to safe operation considering wet conditions and stormwater control). The surrounding earth acts as a natural, permanent barrier that contains sound waves before they can propagate horizontally. o Acoustic Barriers: Purpose-built sound walls made of concrete, metal, or mineral foam. These can achieve reductions of 5–15 dB once they break the line-of-sight. o Buildings and Grandstands: Strategic placement of pit buildings or large spectator stands can act as secondary shields for receptors located behind them. However, they may also reflect noise toward other areas if not placed carefully. o Topography Manipulation: The topography slopes upwards towards NSR08, but “cutting” the track into this higher area, the surrounding walls could	▪ EHS Manager - to monitor compliance. ▪ Noise specialist – to monitor compliance		▪ Noise Monitoring Results and Reports. ▪ Noise Complaints Register.	measures and complaints register; ▪ Vehicle noise testing prior to motorsport events; ▪ Quarterly noise monitoring and during major events during the first year of operation; thereafter as required, following complaints or major events.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
assist in reducing noise levels on the ostrich abattoir. o Low-Noise Asphalt: Utilising porous or open-graded road construction methods can reduce rolling noise and tyre friction. While highly effective for highway traffic, this is less impactful in racing where propulsion (engine) noise dominates. o SAFER Barriers: While primarily a safety feature (Steel and Foam Energy Reduction), the foam backing can provide minor localised sound absorption compared to bare concrete walls, though it is not a primary noise mitigation tool. o Operational Management: Limiting race hours, restricting high-decibel categories to specific times, providing "respite periods". While not lowering the peak noise level, it reduces the Race Equivalent Level perceived by closest receptors. o Specific time slots for high-noise classes: By planning high-noise classes during the early afternoons, a racing event can benefit from lapse conditions. ▪ Monitoring of Noise should be conducted in accordance with the Noise Monitoring Plan (refer to **Section 8**).				

13.3.5 Management of Traffic Impacts

Management Objectives	▪ Maintain safe and efficient traffic flow on the surrounding road network and within the Project site. ▪ Minimise traffic-related safety risks associated with operational activities and motorsport events. ▪ Ensure that transport infrastructure, parking areas and access arrangements remain functional and effective.
Targets	▪ No significant traffic congestion or unsafe queuing attributable to Project operations. ▪ Adequate parking, access and traffic management measures maintained throughout the operational life of the Project. ▪ Traffic management measures implemented during major motorsport events. ▪ No justified and unresolved traffic safety complaints associated with Project operations.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Compile and implement a Traffic Management Plan for major motorsport events, including measures for spectator arrivals, departures, parking management, traffic circulation and emergency access. ▪ Maintain all access roads, intersections, road markings, traffic signage and traffic control devices in a safe and serviceable condition. ▪ Monitor traffic circulation, vehicle queuing, parking demand and pedestrian movements during major motorsport events and implement corrective actions where required. ▪ Ensure emergency vehicle access routes remain unobstructed and accessible at all times. ▪ Maintain clear visibility at all access points and intersections by controlling vegetation growth and removing visual obstructions. ▪ Implement traffic marshalling and directional signage during major events to facilitate the safe movement of vehicles, pedestrians and spectators.	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance.	▪ Operation phase.	▪ Traffic Complaints Register. ▪ Traffic Management Plan. ▪ Traffic Management Plan revisions and records of event monitoring.	▪ As and when complaints are received. ▪ After major motorsport events

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Implement measures to discourage informal roadside parking along the R327 and at access intersections during major events. ▪ Promote the use of public transport, shuttle services and carpooling during major events to reduce private vehicle demand. ▪ Record and investigate all traffic-related incidents, accidents and complaints and implement corrective actions where required. ▪ Review the effectiveness of traffic management measures following major events and implement improvements where required.				

13.3.6 Management of Air Quality

Management Objectives	▪ Minimise air quality impacts associated with motorsport activities, operational traffic, vehicle maintenance activities and fuel handling. ▪ Prevent unnecessary dust generation and atmospheric emissions that may result in nuisance impacts on surrounding receptors. ▪ Promote good housekeeping and maintenance practices to reduce air pollutant emissions from operational activities.
Targets	▪ No significant dust nuisance attributable to Project operations. ▪ No visible emissions from vehicles, equipment or infrastructure resulting from poor maintenance practices. ▪ All vehicles, equipment and fuel storage infrastructure maintained in good working order to minimise emissions. ▪ No justified and unresolved air quality complaints associated with Project operations.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Maintain all vehicles, generators, machinery and equipment in good working order to minimise exhaust emissions. ▪ Undertake regular inspection and maintenance of motorsport vehicles, operational equipment and associated infrastructure to reduce emissions and prevent excessive smoke generation. ▪ Implement dust suppression measures on unpaved roads, parking areas and exposed surfaces where dust nuisance is observed. ▪ Maintain internal roads and parking areas to minimise the generation of airborne dust. ▪ Enforce appropriate speed limits on unpaved roads and other dust-prone areas. ▪ Ensure fuels, hydrocarbons and chemicals are stored, handled and transferred in accordance with applicable environmental and safety requirements. ▪ Immediately address fuel, oil or chemical leaks that could contribute to odours or atmospheric pollution. ▪ Prevent the unnecessary idling of vehicles and equipment where operationally feasible. ▪ Maintain adequate waste management practices and prohibit the open burning of waste on site. ▪ Record and investigate air quality-related complaints and implement corrective measures where required. ▪ Undertake periodic visual inspections for excessive dust generation, smoke emissions and housekeeping deficiencies and implement corrective actions where required.	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance.	▪ Operation phase.	▪ Air Quality Complaints Register including how complaints were addressed. ▪ Records of compliance of motor vehicles with industry standards.	▪ As and when complaints are received. ▪ During and after major motorsport events.

13.3.7 Management of Water, Wastewater & Stormwater

Management Objectives	▪ Ensure the efficient and sustainable use of potable and non-potable water resources throughout the operational life of the Project. ▪ Maintain the effective collection, conveyance, treatment and disposal of wastewater to prevent pollution of the receiving environment. ▪ Manage stormwater quantity and quality to minimise flooding, erosion, sedimentation and pollution of downstream environments. ▪ Maintain stormwater, wastewater and water supply infrastructure in a safe and functional condition to ensure continued service delivery. ▪ Promote water conservation and reuse through rainwater harvesting and non-potable water utilisation where feasible.
Targets	▪ No uncontrolled discharge of wastewater, contaminated stormwater, hydrocarbons, fuels or pollutants to the receiving environment. ▪ All wastewater generated by the development collected and conveyed through the approved sewer reticulation system. ▪ Stormwater attenuation, conveyance and treatment infrastructure maintained and fully operational throughout the operational life of the Project. ▪ Post-development stormwater runoff managed in accordance with the approved stormwater management system to prevent increased downstream flooding and erosion. ▪ No significant erosion, sedimentation or flooding attributable to Project stormwater management failures. ▪ Oil separation, pollution control and stormwater quality treatment systems maintained and functioning effectively where required. ▪ Rainwater harvesting and water reuse infrastructure maintained where implemented to reduce potable water demand. ▪ No justified and unresolved complaints relating to water supply, wastewater management or stormwater management associated with Project operations

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Operate and maintain all stormwater infrastructure, including pipes, channels, attenuation ponds, detention	▪ Operator to implement management actions.	▪ Operation phase.	▪ Visual Inspection through photographs.	▪ As and when complaints are received.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
ponds and outlet structures, in accordance with the approved Stormwater Management Plan (**Annexure 4**). ▪ Inspect and maintain stormwater conveyance systems regularly to ensure that stormwater is effectively conveyed to attenuation facilities and that blockages do not occur. ▪ Maintain attenuation ponds and associated infrastructure to ensure sufficient storage capacity is available for storm events. ▪ Maintain erosion protection and energy dissipation measures at stormwater outlets, channels and pond inlets/outlets. ▪ Separate clean and contaminated stormwater runoff at source and prevent contamination of the clean stormwater system. ▪ Route runoff from pit areas, workshops, fuel storage areas, refuelling facilities and other potentially contaminated areas through the oil separation system prior to discharge to the stormwater management system. ▪ Inspect, maintain and clean oil separators and other stormwater quality treatment devices on a routine basis to ensure effective operation. ▪ Maintain bunded areas, fuel storage facilities and hazardous substance storage areas to prevent contamination of stormwater runoff. ▪ Prevent the discharge of wastewater, fuels, oils, chemicals, detergents or other pollutants into the stormwater system.	▪ EHS Manager - to monitor compliance.		▪ Complaints Register including how complaints were addressed. ▪ Monitoring records and records of implemented corrections to address issues.	▪ During and after major motorsport events. ▪ After major rainfall events.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Ensure all wastewater generated on site is directed to and conveyed through the approved sewer reticulation network. ▪ Inspect and maintain wastewater reticulation infrastructure and promptly repair leaks, blockages or failures. ▪ Monitor wastewater infrastructure capacity and functionality during major motorsport events and periods of peak visitor attendance. ▪ Implement water conservation measures to minimise potable water consumption. ▪ Operate and maintain rainwater harvesting systems where installed and utilise harvested water for approved non-potable uses such as irrigation, dust suppression, washdown activities and toilet flushing. ▪ Ensure rainwater harvesting systems, storage tanks, first-flush diverters, filtration systems and associated infrastructure are maintained in good working order. ▪ Clearly identify and maintain separation between potable and non-potable water reticulation systems. ▪ Conduct regular inspections of water supply infrastructure and repair leaks or defects promptly to minimise water losses. ▪ Implement good housekeeping practices throughout the site to prevent litter, sediment and pollutants from entering the stormwater system. ▪ Record and investigate all incidents of flooding, stormwater pollution, wastewater spillages and water				

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
losses, and implement corrective measures where required.				

13.3.8 Management of Storage and Handling of Hazardous Substances

Management Objectives	▪ Prevent pollution associated with the storage and handling of hazardous substances. ▪ Ensure the safe storage, handling and use of hazardous substances throughout the operational life of the Project. ▪ Minimise the risk of spills, leaks, fires and other hazardous substance incidents.
Targets	▪ No uncontrolled releases, spills or leakages of hazardous substances. ▪ All hazardous substances stored within designated and appropriately bunded storage areas. ▪ No contamination of soil, groundwater, surface water or stormwater systems attributable to Project activities. ▪ All hazardous substance incidents recorded and appropriately addressed.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Hazardous substances shall be stored and handled per the appropriate legislation and standards, including the Hazardous Substances Act (Act No. 15 of 1973), the Occupational Health and Safety Act (No. 85 of 1993), relevant associated Regulations and applicable SANS and international standards. ▪ All hazardous substances shall be stored, handled and used in accordance with the applicable SDS, which shall be readily available at all storage and handling areas. ▪ Appropriate warning signage shall be displayed at all hazardous substance storage and handling areas.	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance.	▪ Operation phase.	Incident records and spill reports	Weekly inspection
			Visual inspection records and photographs	Monthly
			Hazardous substances register and SDS register	Quarterly
			Hazardous waste disposal records	Quarterly
			Training records	Annually

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Hazardous substance storage areas shall be adequately ventilated where required. ▪ Smoking shall be prohibited in all hazardous substance storage, handling and refuelling areas. ▪ Appropriate firefighting equipment shall be provided and maintained at hazardous substance storage and handling areas. ▪ Incompatible or flammable materials shall not be stored together. ▪ Personnel handling hazardous substances shall receive appropriate training in hazardous substance management, emergency response procedures and spill containment measures. ▪ All hazardous substance storage tanks and containers shall be located within impermeable bunded areas capable of containing at least 110% of the volume of the largest container. ▪ Spill kits, secondary containment measures and spill response procedures shall be provided and maintained at all hazardous substance storage, handling and refuelling areas. ▪ Hazardous substance storage areas and associated infrastructure shall be inspected regularly for signs of leaks, damage or deterioration. ▪ All spillages shall be immediately contained, cleaned up and reported in accordance with emergency response procedures and applicable legal requirements. ▪ Spill reporting procedures shall be clearly displayed at hazardous substance storage and handling locations.			Complaint register and records of implemented corrective actions	As and when incidents occur and complaints are received

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Hazardous waste and contaminated materials shall be disposed of through appropriately authorised service providers and disposal facilities, and disposal records shall be maintained. ▪ A register of hazardous substances stored and used on site shall be maintained and updated regularly. ▪ Pollution incidents associated with hazardous substances shall be reported to DEADP and managed in accordance with applicable legislative requirements.				

13.3.9 Management of Waste

Management Objectives	▪ Minimise the generation of hazardous and general waste. ▪ Ensure the safe storage, handling and disposal of waste. ▪ Prevent pollution associated with waste management activities.
Targets	▪ No unauthorised dumping, littering or burning of waste. ▪ All waste disposed of through appropriately authorised facilities and service providers. ▪ No contamination of soil, groundwater, surface water or stormwater systems attributable to waste management activities. ▪ Waste storage areas maintained in a neat, secure and environmentally acceptable condition.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Implement and maintain a waste management system for the segregation, storage, collection, recycling and disposal of all waste streams generated by the facility. ▪ Separate general waste, recyclable waste and hazardous waste at source and store each waste stream in appropriately designated containers and storage areas.	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance.	▪ Operation phase.	Waste disposal records and waste manifests	Weekly
			Visual inspection records and photographs	Monthly
			Hazardous waste disposal certificates	Quarterly

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Provide adequate waste receptacles at workshops, industrial areas, visitor facilities, public areas, ablution facilities and event venues. ▪ Maintain waste storage areas in a clean, secure and orderly condition at all times. ▪ Ensure waste storage areas are appropriately located and managed to prevent littering, windblown waste, odours and attraction of pests or vermin. ▪ Implement waste minimisation, reuse and recycling programmes where feasible. ▪ Ensure all general waste is removed regularly and disposed of at appropriately authorised waste disposal facilities. ▪ Ensure all hazardous waste is collected, transported and disposed of by appropriately authorised service providers and at licensed facilities. ▪ Maintain records of waste quantities, waste collections and waste disposal certificates where applicable. ▪ Prohibit the burning, burying or unauthorised disposal of waste on site. ▪ Implement housekeeping measures to prevent littering throughout the facility, especially during motorsport events and periods of high visitor attendance. ▪ Inspect waste storage areas regularly for signs of leaks, damage, overflow or poor waste management practices and implement corrective actions where required. ▪ Ensure personnel receive awareness training regarding waste segregation, recycling and waste handling procedures.			Training records	Annually
			Complaint register and records of implemented corrective actions	As and when incidents occur and complaints are received
			Incident records	As and when incidents occur

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Record and investigate any waste-related pollution incidents, complaints or non-compliances and implement corrective actions where required.				

13.3.10 Management of Emergency Procedures

Management Objectives	▪ Ensure effective emergency preparedness and response for operational incidents, accidents and emergency situations. ▪ Protect the health and safety of employees, contractors, participants, visitors and spectators during emergency situations. ▪ Minimise the environmental consequences of fires, hazardous substance incidents, vehicle accidents and other emergency events. ▪ Ensure that emergency response resources, infrastructure and personnel remain operational and adequately prepared.
Targets	▪ An Emergency Response Plan is developed, implemented and maintained for all operational activities. ▪ Emergency response equipment remains available, accessible and operational at all times. ▪ All relevant personnel receive emergency response training and emergency procedures induction. ▪ All emergency incidents are recorded, investigated and appropriate corrective actions implemented. ▪ No emergency access routes are obstructed or inaccessible. ▪ Emergency drills are conducted and documented in accordance with the Emergency Response Plan

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Develop, implement and maintain a site-specific Emergency Response Plan covering fires, hazardous substance incidents, motorsport accidents, medical	▪ Operator to implement management actions.	▪ Operation phase.	Emergency Response Plan and revision records.	Annually and when significant operational changes occur.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
emergencies, environmental incidents and extreme weather events. Align this plan with the PetroSA Emergency Response Plan. ▪ The plans should be practised regularly, e.g. small, localised drills quarterly and one large evacuation type drill annually. For the latter at the raceway development, even if one does not actually evacuate the public, the owner/operator should practice setting up the systems on a very busy race weekend so all role players know what they would do in an actual emergency. The full evacuation can be physically practised on a less busy day. ▪ Conduct regular emergency response drills, including fire, spill response and evacuation exercises. ▪ Ensure emergency contact details are displayed prominently throughout the facility. ▪ Provide and maintain appropriate firefighting equipment throughout the facility. ▪ Clearly demarcate emergency assembly points, emergency exits and evacuation routes. ▪ Ensure emergency vehicle access routes remain unobstructed and accessible at all times.	▪ EHS Manager - to monitor compliance.		Emergency drill records and attendance registers.	Small, localised drills quarterly and one large evacuation type drill annually
			Emergency equipment inspection record including Photographic inspection records of emergency signage, routes and assembly areas.	Quarterly
			Firefighting equipment service records.	As per manufacturer's specification and legal requirements.
			Training records and induction registers.	Upon induction and annually thereafter.
			Incident, accident and emergency response reports.	As and when incidents occur
			Complaint records and stakeholder communications relating to emergency incidents.	As and when complaints are received.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Maintain spill response equipment and emergency response resources at hazardous substance storage, workshop, refuelling and raceway areas. ▪ Provide emergency response training to operational personnel and contractors. ▪ Inspect and maintain firefighting, first aid and emergency response equipment regularly. ▪ Record, investigate and report all incidents, emergencies and near misses and implement corrective actions where required.				

13.3.11 Management of Socio-Economic Environment

Management Objectives	▪ Maximise local employment and economic development opportunities associated with the Project. ▪ Promote inclusive, fair and equitable employment practices and skills development. ▪ Enhance local business development, tourism opportunities and positive stakeholder relationships.
Targets	▪ Local employment and procurement opportunities promoted where feasible. ▪ Fair and non-discriminatory employment practices implemented throughout Project operations. ▪ Training and skills development opportunities provided to employees where feasible. ▪ No justified and unresolved socio-economic or community-related complaints.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Prioritise the employment of suitably qualified local residents where feasible. ▪ Implement fair, transparent and non-discriminatory recruitment practices.	▪ Operator to implement management actions. ▪ EHS Manager - to monitor compliance.	▪ Operation phase.	Employment records and workforce statistics.	Annually.
			Records of local employment and procurement.	Annually.

Management Actions	Responsibilities	Implementation Timeframe	Monitoring Requirements	
			Evidence	Frequency
▪ Promote equal employment opportunities for women and men. ▪ Provide training and skills development opportunities for employees where feasible. ▪ Procure goods and services from local businesses, SMMEs and BBBEE-compliant enterprises where feasible. ▪ Support local service providers associated with motorsport events and facility operations. ▪ Engage with local stakeholders, businesses and tourism organisations to maximise local economic benefits. ▪ Maintain a stakeholder engagement and grievance mechanism throughout the operational life of the Project. ▪ Record, investigate and address community complaints relating to Project operations. ▪ Promote tourism and local economic development opportunities associated with operation of the Motorsport Arena.			Training records and attendance registers.	Annually.
			Stakeholder engagement records and meeting minutes.	As and when engagement activities occur.
			Community complaints register and corrective action records including records of incidents relating to social conflict, discrimination or community grievances.	As and when complaints are received.
			Records of local supplier and SMME participation.	Annually.

14 REFERENCES

Bezuidenhout, C. 2026. Civil Engineering Services Report for the Mossdustria Development. Lukhozi Consulting Engineers, Port Elizabeth, Eastern Cape.

Bouwer, D. 2023. Agricultural Compliance Statement for Mossdustria Development, Mossel Bay, Western Cape. Digital Soils Africa, Port Elizabeth, Eastern Cape.

Butler, E. 2023. Palaeontological Desktop Assessment for the Mossdustria Expansion and Development of a Raceway in Mossel Bay, in the Western Cape Province. Banzai Environmental (Pty) Ltd, Bloemfontein, Free State.

Colloty, B. 2026a. Wetland/Aquatic Assessment for the Mossdustria Expansion on Erf 6 and Remainder of Portion 8 of the Farm Rietvalley 225, near Mossel Bay. EnviroSci (Pty) Ltd, Gqeberha.

Colloty, B. 2026b. Terrestrial, Plant and Animal Biodiversity Impact Assessment for the Mossdustria Expansion on Erf 6 and Remainder of Portion 8 of the Farm Rietvalley 225, near Mossel Bay. EnviroSci (Pty) Ltd, Gqeberha.

De Jager, M. 2026. Noise Study for Environmental Impact Assessment for the Proposed Motorsport Development in Mossdustria, Mossel Bay, Western Cape Province. Enviro-Acoustic Research cc, Pretoria.

Kempthorne, A and Sondwana, B. 2023. Socio-Economic Impact Assessment for the Mossdustria Extension, Development of a Raceway and a Solar Energy Facility. Urban-Econ Development Economists (Pty) Ltd, Cape Town, Western Cape.

Godoka, N., and Bezuidenhout, C. 2026. Stormwater Management Report for the Mossdustria Development. Lukhozi Consulting Engineers, Port Elizabeth, Eastern Cape.

GPL Consulting, 2023. Traffic Impact Assessment for the proposed Mossdustria Development. Greg Pryce Lewis Consulting, Gqeberha, Eastern Cape.

Marshall, J. 2023. Landscape & Visual Impact Assessment for the Proposed Expansion of Mossdustria Industrial Area, Development of a Motor Sport Arena and a Solar PV Facility, Mossel Bay, Western Cape Province. Environmental Planning and Design (Pty) Ltd, KwaZulu-Natal.

Oberholzer, J., Smit, L. and Conrad, J. 2026. Geohydrological Assessment for Mossdustria, Mossel Bay, Western Cape. GEOSS Report Number: 2026/08-08. GEOSS – South Africa (Pty) Ltd, Stellenbosch, South Africa.

Phillips, R. 2025. Avifaunal Impact Assessment for the Proposed Expansion of the Mossdustria Precinct near Mossel Bay, Western Cape. Cossypha Ecological (Pty) Ltd, KwaZulu-Natal.

Webley, L. 2023. Archaeological Walkdown Report: Proposed Extension of Mossdustria and the Establishment of a Raceway on Rem of Rietvalley 225/8, Mossel Bay District and Municipality. Dr Lita Webley, Cape Town, Western Cape

ANNEXURE 1

HERITAGE WESTERN CAPE CHANCE FINDS PROCEDURE

HWC PROCEDURE: CHANCE FINDS OF PALAEONTOLOGICAL MATERIAL
June 2016

Introduction
This document is aimed to inform workmen and foremen working on a construction and/or mining site. It describes the procedure to follow in instances of accidental discovery of palaeontological material (please see attached poster with descriptions of palaeontological material) during construction/mining activities. This protocol does not apply to resources already identified under an assessment undertaken under s. 38 of the National Heritage Resources Act (no 25 of 1999).

Fossils are rare and irreplaceable. Fossils tell us about the environmental conditions that existed in a specific geographical area millions of years ago. As heritage resources that inform us of the history of a place, fossils are public property that the State is required to manage and conserve on behalf of all the citizens of South Africa. Fossils are therefore protected by the National Heritage Resources Act and are the property of the State. Ideally, a qualified person should be responsible for the recovery of fossils noticed during construction/mining to ensure that all relevant contextual information is recorded.

Heritage Authorities often rely on workmen and foremen to report finds, and thereby contribute to our knowledge of South Africa's past and contribute to its conservation for future generations.

Training
Workmen and foremen need to be trained in the procedure to follow in instances of accidental discovery of fossil material, in a similar way to the Health and Safety protocol. A brief introduction to the process to follow in the event of possible accidental discovery of fossils should be conducted by the designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO

It is recommended that copies of the attached poster and procedure are printed out and displayed at the site office so that workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place.

Actions to be taken
One person in the staff must be identified and appointed as responsible for the implementation of the attached protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on site should follow the protocol correctly in order to not jeopardize the conservation and well-being of the fossil material.

Once a workman notices possible fossil material, he/she should report this to the ECO or site agent.

Procedure to follow if it is likely that the material identified is a fossil:

i. The ECO or site agent must ensure that all **work ceases** immediately in the vicinity of the area where the fossil or fossils have been found;

ii. The ECO or site agent must **inform HWC of the find immediately.** This information must include photographs of the findings and GPS co-ordinates**;**

iii. The ECO or site agent must compile a **Preliminary Report and fill in the *Fossil Discoveries: HWC Preliminary Record Form*** within 24 hours without removing the fossil from its original position. The **Preliminary Report** records basic information about the find including:

- The date
- A description of the discovery
- A description of the fossil and its context (e.g. position and depth of find)
- Where and how the find has been stored
- Photographs to accompany the preliminary report (the more the better):
  - ➔ A scale must be used
  - ➔ Photos of location from several angles
  - ➔ Photos of vertical section should be provided
  - ➔ Digital images of hole showing vertical section (side);
  - ➔ Digital images of fossil or fossils.

Upon receipt of this **Preliminary Report**, HWC will inform the ECO or site agent whether or not a rescue excavation or rescue collection by a palaeontologist is necessary.

v. **Exposed finds must be stabilised where they are unstable and the site capped, e.g. with a plastic sheet or sand bags.** This protection should allow for the later excavation of the finds with due scientific care and diligence. HWC can advise on the most appropriate method for stabilisation.

vi. If the find cannot be stabilised, **the fossil may be collect with extreme care** by the ECO or the site agent and put aside and protected until HWC advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove the all fossil material and any breakage of fossil material must be avoided at all costs.

No work may continue in the vicinity of the find until HWC has indicated, in writing, that it is appropriate to proceed.

iLifa leMveli leNtshona Koloni
Erfenis Wes-Kaap
Heritage Western Cape

FOSSIL DISCOVERIES: HWC PRELIMINARY RECORDING FORM		
Name of project:		
Name of fossil location:		
Date of discovery:		
Description of situation in which the fossil was found:		
Description of context in which the fossil was found:		
Description and condition of fossil identified:		
GPS coordinates:	Lat:	Long:
If no co-ordinates available then please describe the location:		
Time of discovery:		
Depth of find in hole		
Photographs (tick as appropriate and indicate number of the photograph)	Digital image of vertical section (side)	
	Fossil from different angles	
	Wider context of the find	
Temporary storage (where it is located and how it is conserved)		
Person identifying the fossil	Name: Contact:	
Recorder	Name: Contact:	
Photographer	Name: Contact:	

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Procedure for Accidentally Found or Uncovered Human Remains

All human remains or burials/graves older than 60 years (located outside of a formal cemetery administered by a local authority are protected under Sections 35 (4) and 36(3) of the National Heritage Resources Act (No. 25 of 1999) and cannot be removed without a permit or permission from Heritage Western Cape (HWC).

This procedure must be applied by the South African Police Services (SAPS), HWC and Forensic Pathology Units under the jurisdiction of the Department of Health (Western Cape Government) in all instances of the accidental discovery of human remains in the Western Cape Province that may be older than 60 100 years.

The procedure aims to ensure that proper reporting, assessment, investigation and safeguarding of discoveries of human remains takes place, whether by the SAPS for recent remains, or by archaeologists for historical or ancient remains.

This is to ensure that preliminary identification can happen without forensic or archaeological information being compromised or destroyed.

University of Cape Town Department of Human Biology will be the temporary accessioning facility for human remains of an archaeological or historical nature uncovered under events which make this procedure applicable.

1	**CONTACT SA POLICE SERVICE (SAPS)** On discovery of human remains, stop work, leave everything in place, contact SAPS: • SAPS guards identified human remains until Pathologist or Forensic Officer (FO) arrives on site. Nothing must be removed until the Pathologist or FO arrives on site. • All scenes must be documented by Local Criminal Record Centre (LCRC) / Victim Identification Centre (VIC), determined by Divisional Forensic Services (DFS) procedure. • VIC and LCRC attend all scenes and bones found by the public first to determine if heritage or forensic in nature, part of DFS (SAPS) mandate. • VIC will inform SAPS on the way forward, whether heritage or forensic in nature. If in doubt VIC will contact Heritage Western Cape for a combined assessment. • VIC must be contacted, to perform preliminary analysis of all bones for identification or human skeletal remains found. • If VIC is involved in case, VIC Section will contact Heritage Western Cape to inform about case.
2	**SITE ANALYSIS** If, based on the attached age assessment guidelines, the human remains are suspected to be archaeological or historical: • The Pathologist or Forensic Officer (FO) contacts HOs at HWC and sends photographs (taken according to the attached photographic guidelines). • It may be necessary to conduct an emergency joint site inspection by the pathologist, FO and/or HO to assess the age and significance of the human remains. Non-destructive analysis of remains and site analysis must be conducted by an appropriately qualified archaeologist or forensic anthropologist / pathologist or by the trained FOs and HOs.
3.1	**RECENT REMAINS**

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	If, following the joint site inspection/ review of information, the remains are deemed NOT to be archaeological or historical by the pathologist, FO and HO: • The remains can be removed if necessary by the SAPS. • The relevant FOs & Pathologists to send confirmation via email or a registered letter to the relevant HWC Officials regarding the recent remains
3.2	**ARCHAEOLOGICAL OR HISTORICAL REMAINS** If, following the joint site inspection/ review of information, the remains are deemed to be archaeological or historical by the pathologist, FO and HO: The site analysis must aim to answer the following questions: (1) Are there human remains that are still in situ; and (2) Can they be protected in situ? If the answer to (1) is 'no' then the disturbed remains must be recorded and removed professionally. If the answer to (1) is 'yes', then proceed to question (2): • If they can be protected, then record in situ professionally, see Stage 4.1. • If not, then record and remove professionally, see Stage 4.2. •
4.1	**RECORD & PROTECT IN SITU** If the archaeological and historical remains have been uncovered during development, and can be left in place and avoided in future, the remains and site must be recorded by an appropriately qualified or experienced archaeologist, with minimal further disturbance, then covered over / reburied, and the site clearly marked and avoided in future. The archaeologist must be hired at landowner or developer's expense. An HWC permit is required for this work.
4.2	**RECORD AND REMOVE TO SAFETY** The archaeological or historical human remains can only be removed by the VIC FO/Pathologist if the human remains have been disturbed from their context, and are under considerable threat, in order to prevent further damage. If this is the case, the VIC FO/Pathologist must notify HWC prior to proceeding with the removal. Considerable threat are deemed to be in a place of insecure public access and threatened with unauthorised removal. In the event of emergency removal, the VIC, FO or Pathologist must record the context and location (including GPS coordinates), describe any finds, and provide a summary of events to HWC. Once this is done, no further excavations must be undertaken. HWC must be notified immediately once this is complete. The human remains must be handed over to the appropriate HWC Officials. If impacts on the historical or archaeological human remains cannot be prevented, an appropriately qualified or experienced archaeologist or other suitable specialist must record the site, excavate and recover the remains and remove them to a temporary repository.

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	The appointed specialist must be hired at landowner or developer's expense. An HWC permit is required for this work.
Please note the following:	
	If there is any doubt about whether the remains are archaeological or recent, a precautionary approach must be adopted and the remains must be treated as both forensic and archaeological until proven otherwise.
	If the grave, burial place or burial site contains multiple individuals, a professional archaeologist must be hired, either at landowner or developer's expense, to conduct further work. An HWC permit is required for this work. If classified as a archaeological grave or historical burial site, the SAPS do not have any further responsibility to protect the site and it becomes the responsibility of Heritage Western Cape. Area will be marked but not guarded by SAPS.
	In cases classified as historical or archaeological in nature, all relevant reports must be sent to Heritage Western Cape for recording and reporting purposes. For forensic cases, requests for reports must be made via the investigating officer assigned to case.
	If a SAPS officer or member of the public is unsure of the process, they are advised to contact Heritage Western Cape immediately at 021 483 9533/9543/9598 for further assistance or email ceoheritage@westerncape.gov.za, SAPS must consult VIC Section, Specialised Identification Services, for guidance. W/O Le Roux, 082 377 0684. All human remains found must be reported to the SAPS and further reported to VIC/LCRC.
	HWC and SAPS & DOH FPS contacts are as follows: • Stephanie-Ann Barnardt (HWC): 021 829 3315 Stephanie.barnardt@westerncape.gov.za • Waseefa Dhansay (HWC): 021 483 9692 or waseefa.dhansay@westerncape.gov.za • Warrant Officer Stephne Le Roux (SAPS): 082 377 0684 • Prof. Lorna Martin (DOH FPS): 021 406 6412
	This procedure is only applicable in the Western Cape Province. For procedures regarding human remains found on a National Heritage Site or outside of the Western Cape, please contact Mimi Seetelo at the South African Heritage Resources Agency at mseetelo@sahra.org.za or 012 320 8490.

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ILifa leMveli leNtshona Koloni
Erfenis Wes-Kaap
Heritage Western Cape

ADDENDUM

IDENTIFICATION ASSESSMENT:

All human remains or burials/graves older than 60 years located outside of a formal cemetery administered by a local authority are protected under Sections 35 (4) and 36(3) of the National Heritage Resources Act (No. 25 of 1999). They are deemed as cultural heritage sites whether a physical individual or the place of burial. The aim of this document is to assist SAPS Officers, Forensic Officials and Pathologists in the identification of human remains as possibly archaeological or historical.

The following signs indicate whether human remains are possibly of an archaeological and historical nature:

CULTURAL OR ARCHAEOLOGICAL SIGNS

1. Human remains buried at least 1 metre deep under a layer of land or marine shells or beneath undisturbed soil layers;
2. Human remains buried in a crouched or foetal position, either lying on their side or sitting upright, and facing east or north;
3. Human remains buried in a supine position (lying horizontally with arms to the side and the skull facing towards the surface).
4. Human remains buried with material or goods such as ostrich egg shell, stone tools, historical artefacts, or evidence of cultural practices, such as coffin nails;
5. Human remains buried under a gravestone, headstone or stone pile, whether disturbed or intact; and
6. The site in question was reported to contain historical or archaeological graves or burials either by the respective local community or other relevant stakeholders.

PHYSICAL SIGNS

7. Teeth are worn down and/or decayed;
8. Jaws and teeth show no signs of modern dental work (e.g. fillings, dentures); and
9. The skeletal remains have an ochre/brown colouring and the bones are worn and brittle.

In the event that any of these elements are present, please contact Heritage Western Cape immediately:

ceoheritage@westerncape.gov.za

021 483 5959 or 021 483 9900

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ANNEXURE 2

PALAEONTOLOGY DESKTOP ASSESSMENT CHANCE FINDS PROCEDURE

These recommendations should be incorporated into the Environmental Management Programme (EMPr) for Mossdustria development in the Western Cape Province.

10 CHANCE FINDS PROTOCOL

Cultural Heritage in South Africa (includes all heritage resources) is protected by the National Heritage Resources Act (Act 25 of 1999) (NHRA). According to Section 3 of the Act, all Heritage resources include "all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens".

Palaeontological heritage is unique and non-renewable, protected by the NHRA, and is the property of the State. It is thus the responsibility of the State to manage and conserve fossils on behalf of the citizens of South Africa. Palaeontological resources may not be excavated, broken, moved, or destroyed by any development without prior assessment and without a permit from the relevant heritage resources authority as per section 35 of the NHRA. A fossil is the naturally preserved remains (or traces) of plants or animals embedded in rock. These plants and animals lived in the geologic past millions of years ago. Fossils are extremely rare and irreplaceable. By studying fossils, it is possible to determine the environmental conditions that existed in a specific geographical area millions of years ago.

This informational document is intended for workmen and foremen on construction sites. It describes the actions to be taken when construction activities accidentally uncover fossil material. It is the responsibility of the Environmental Site Officer (ESO) or site manager of the project to implement the procedure to follow when a fossil is accidentally uncovered. In the absence of the ESO, a member of the staff must be appointed to be responsible for the proper implementation of the chance find protocol not to compromise the conservation of fossil material.

The following procedure will only be followed if fossils are uncovered during excavation.

Chance Find Procedure

- If a chance find is made the person responsible for the find must immediately stop working and all work that could impact that finding must cease in the immediate vicinity of the find.
- The person who made the find must immediately report the find to his/her direct supervisor which in turn must report the find to his/her manager and the ESO or site manager. The ESO or site manager must report the find to the relevant Heritage Agency (South African Heritage Research Agency, SAHRA). (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za). The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS coordinates.

- A preliminary report must be submitted to the Heritage Agency within **24 hours** of the find and must include the following: 1) date of the find; 2) a description of the discovery and 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates.
- Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found.
- Upon receipt of the preliminary report, the Heritage Agency will inform the ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary.
- The site must be secured to protect it from any further damage. **No attempt** should be made to remove material from their environment. The exposed finds must be stabilised and covered by a plastic sheet or sandbags. The Heritage agency will also be able to advise on the most suitable method of protection of the find.
- In the event that the fossil cannot be stabilised, the fossil may be collected with extreme care by the ESO (site manager). Fossil finds must be stored in tissue paper and in an appropriate box, while due care must be taken to remove all fossil material from the rescue site.
- Once Heritage Agency has issued the written authorisation, the developer may continue with the development in the affected area.
-

11 BIBLIOGRAPHY

Aldridge, R.J., Gabbott, S.E. & Theron, J.N. 2001. The Soom Shale. In: Briggs, D.E.G. & Crowther, P.R. (Eds.) Palaeobiology II, pp. 340-342. Blackwell Science Ltd, Oxford.

Almond, J., Pether, J, And Groenewald, G. 2013. South African National Fossil Sensitivity Map. SAHRA and Council for Geosciences. Schweitzer *et al*. (1995) pp p288.

Almond, J.E. & Pether, J. 2009. Palaeontological heritage of the Northern Cape. Interim SAHRA technical report, 124 pp.

Almond, J.E. 1998a. Trace fossils from the Cape Supergroup (Early Ordovician – Early Carboniferous) of South Africa. Journal of African Earth Sciences 27 (1A): 4-5.

Almond, J.E. 1998b. Early Palaeozoic trace fossils from southern Africa. Tercera Reunión Argentina de Icnologia, Mar del Plata, 1998, Abstracts p. 4.

Almond, J.E. 2010a. Palaeontological impact assessment: desktop study. Jeffrey's Bay Wind Project, Kouga Municipality, Eastern Cape Province, 18 pp. Natura Viva cc, Cape Town.

Almond, J.E. 2010b. Palaeontological heritage impact assessment of the Coega IDZ, Eastern Cape Province, 112 pp. Natura Viva cc, Cape Town.

Almond, J.E. 2019. Grid connection for the proposed Impofu North, Impofu West & Impofu East Wind Farms near Humansdorp, Eastern Cape. Palaeontological heritage: combined desktop & field-based basic assessment, 60 pp. Natura Viva cc, Cape Town.

Almond, J.E., De Klerk, W.J. And Gess, R. 2008. Palaeontological heritage of the Eastern Cape. Interim technical report for SAHRA, 25 pp, Natura Viva cc, Cape Town.

ANNEXURE 3

GROUNDWATER MANAGEMENT PLAN

11. Groundwater Management Plan

Although no groundwater abstraction is proposed as part of the Section 21(c) and (i) WULA, a groundwater management plan is recommended to ensure that potential impacts of the proposed development on the groundwater environment are appropriately managed. The management plan should focus on protection of the deeper groundwater system, as well as the shallow groundwater that may occur above the dense clay-rich materials encountered during the auger investigation. The following measures are recommended:

1. Existing suitable boreholes and the on-site piezometer should be incorporated into a groundwater monitoring programme to establish baseline conditions and identify any changes in groundwater quality associated with construction and operation.
2. Where suitable monitoring points are available, groundwater levels should be monitored to identify any significant changes in groundwater levels or groundwater-flow conditions.
3. Fuels, oils, chemicals, hazardous materials and construction-related waste must be stored, handled and disposed of appropriately to prevent infiltration of contaminants into the subsurface.
4. Appropriate spill-response equipment should be available on site and any spills or leaks must be contained, cleaned up and recorded promptly.
5. Excavations should be monitored for the occurrence of shallow groundwater. If groundwater is encountered, the flow conditions and potential connection to nearby wetland areas should be assessed.
6. Areas contributing to recharge of the fractured Skurweberg Formation should be protected from unnecessary contamination and excessive disturbance. Particular care should be taken where the formation is exposed or where the protective shallow cover is thin.
7. Clean and contaminated stormwater should be appropriately separated and managed to prevent uncontrolled infiltration of potentially contaminated water.
8. Any significant deterioration in groundwater quality or unexpected groundwater interception during construction should trigger an investigation and, where necessary, additional monitoring and remedial measures.
9. Monitor wetland water levels, flow and water quality during construction and operation, with significant changes investigated.

The proposed groundwater monitoring parameters are mentioned in **Table 12**. It is recommended to analyse the specified parameters monthly during construction, and thereafter, during the operational phase, to monitor the groundwater quarterly.

Table 12: Proposed groundwater monitoring parameters.

Parameter	Frequency
Groundwater Level	Monthly*
Chemical parameters	
pH (at 25 ºC)	Monthly (Field Chemistry)
Conductivity (mS/m) (at 25 ºC)	Monthly (Field Chemistry)
Total Dissolved Solids (mg/L)	Monthly (Field Chemistry)
Sodium (mg/L as Na)	Monthly*
Potassium (mg/L as K)	Monthly*

Parameter	Frequency
Magnesium (mg/L as Mg)	Monthly*
Calcium (mg/L as Ca)	Monthly*
Chloride (mg/L as Cl)	Monthly*
Sulphate (mg/L as SO_4)	Monthly*
Nitrate & Nitrite Nitrogen (mg/L as N)	Monthly*
Nitrate Nitrogen (mg/L as N)	Monthly*
Nitrite Nitrogen (mg/L as N)	Monthly*
Ammonia Nitrogen (mg/L as N)	Monthly*
Total Petroleum Hydrocarbons (TPH)	Monthly*
*Monthly during construction, thereafter quarterly	

12. Assumptions and Limitations

During this study, certain assumptions limited the accuracy of the data acquired and the outcome of this report.

- The geological interpretation is based on the available 1:50 000 geological mapping and the information available for the study area. Geological contacts and subsurface conditions may vary locally from those depicted on the regional geological map.
- Available data was sourced from the relevant groundwater databases and sources. The aquifer vulnerability, yield and quality data are predominantly accurate, albeit mapped at a regional scale.
- The presence of dense clay-rich material encountered during augering is interpreted to potentially restrict vertical infiltration and promote shallow runoff, ponding and perched water. However, the extent of the cover across the site is not confirmed.
- The groundwater quality was derived from one set of test results. Seasonal changes may occur in the chemistry of the water from the borehole and this has not been accounted for.
- It was not possible to collect a rainfall sample as part of the isotope investigation; therefore, site-specific precipitation isotopes were not available for comparison.
- The coordinates of the NGA boreholes are sometimes found to be inaccurate. Hence, it was difficult to incorporate the NGA data accurately into the field hydrocensus.
- Limited water level data could be obtained through the NGA database as well as through the hydrocensus and assumptions had to be made without this data available.
- The stable isotope dataset comprises a limited number of samples and therefore provides an indication of water sources and potential interaction but cannot conclusively establish groundwater-surface water flow directions or hydraulic connectivity.
- The assessment of potential impacts is based on the proposed development footprint and activities available at the time of the investigation. Changes to the development layout, excavation depths, stormwater infrastructure or below-ground services may require the geohydrological assessment to be revisited.

ANNEXURE 4

STORMWATER MANAGEMENT PLAN

MOSSEL BAY MUNICIPALITY

1755 MOSSDUSTRIA DEVELOPMENT

STORMWATER MANAGEMENT REPORT

REPORT NO. 1755/C2 : REVISION NO. 0

JULY 2026

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1755 MOSSDUSTRIA DEVELOPMENT

STORMWATER MANAGEMENT REPORT

REPORT NO. 1755/C2 : REVISION NO. 0

JULY 2026

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ANNEXURE

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1755-STW-002: Stormwater Reticulation Layout Plan

1755 MOSSDUSTRIA DEVELOPMENT

STORMWATER MANAGEMENT REPORT

REPORT NO. 1755/C2 : REVISION NO. 0

JULY 2026

1 INTRODUCTION AND BACKGROUND

The Mossdustria area, located within Mossel Bay's Urban Edge, is earmarked for significant industrial expansion and urban development as part of strategic spatial planning frameworks. Originally established to support the oil and gas industry in the 1980s, Mossdustria has evolved into a key industrial node. Challenges such as the decline of gas production at PetroSA and the necessity for job creation have spurred efforts to diversify the area's economic activities through catalytic projects like the Motorsport Arena and renewable energy initiatives.

The proposed development includes industrial expansion, motorsport-related facilities, conservation efforts, and alternative energy production. These projects are designed to optimise existing municipal infrastructure, stimulate job creation, and enhance tourism, thereby ensuring long-term municipal sustainability. A conservation area will safeguard sensitive flora, while strategic urban planning will balance economic growth and environmental considerations.

Lukhozi Consulting Engineers has been appointed to provide civil engineering input in support of the Environmental Authorisation Application (EAA) for the proposed development. This Stormwater Management Report supplements the Civil Engineering Services Report (Report No. 1755/C1) and sets out the conceptual stormwater management strategy for the development in greater detail, including catchment delineation, runoff estimation, attenuation and conveyance requirements, stormwater quality management, and the potential for rainwater harvesting from building roofs.

2 SCOPE OF REPORT

The purpose of this report is to provide conceptual design input relating to the management of stormwater within the proposed development. The findings will inform the municipality's planning and decision-making processes. The scope of this report covers the following:

- Identification of catchment boundaries, watercourses and stormwater runoff paths.
- Determination of peak stormwater runoff from the site for a range of recurrence intervals, for both pre-development and post-development conditions.
- Determination of the location, routes and sizes required for stormwater conveyance structures (channels and pipes) and attenuation facilities (detention ponds).
- Separation of clean and contaminated runoff, and management of contaminated runoff from the motorsport arena and industrial areas.
- Assessment of the potential for rainwater harvesting from building roofs and stormwater harvesting for non-potable reuse.
- Recommendations for further investigations and the detailed design phase.

3 LOCALITY

The proposed development will take place on portion 8 of Farm 225 within the Mossdustria industrial zone of the Mossel Bay Municipality jurisdiction (MBM), Western Cape. The site is approximately 13 km west of Mossel Bay Central and is accessible via the N2 and R327. A Locality Plan is indicated on drawing 1755-GEN-001 attached hereto as Annexure A.

Coordinates to the centre of the site are:

Latitude 34°09'59.23"S; Longitude 22°00'24.68"E

4 SPECIALIST STUDIES AND DATA SOURCES

4.1 SURVEY DATA

The drawings were done with the use of information from online spatial databases and shapefiles from the Mossel Bay Municipality. A detailed topographical survey will be required for the detailed design and layout of the stormwater conveyance network, attenuation ponds and overland escape routes.

4.2 GEOTECHNICAL INVESTIGATION

A geotechnical investigation is recommended before detailed design. Of particular relevance to stormwater design, the investigation should determine soil permeability, seasonal groundwater levels, and the suitability of in-situ material for pond embankments and linings. These parameters will inform whether infiltration-based SuDS measures are feasible and whether the proposed attenuation ponds will require lining.

5 STORMWATER MANAGEMENT

5.1 STANDARDS

The following standards and guidelines are applicable to the stormwater infrastructure:

- The Neighbourhood Planning and Design Guide: Section L Stormwater (Red Book 2019)
- The South African National Roads Agency: Drainage Manual 6th Edition, 2013
- SANS 10400-R: The Application of the National Building Regulations – Part R: Stormwater Disposal

5.2 DRAWINGS

The following drawing applies to this section of the report:

- 1755-STW-002 P0 Stormwater Reticulation Layout Plan

5.3 CONCEPTUAL DESIGN RATIONALE

An increase in runoff quantity and a deterioration in runoff quality are expected due to surface hardening associated with the proposed development. The Sustainable Drainage System (SuDS) control measure adopted for this development is “Source & Local Control” as per Table L.2 in the Red Book. Runoff quantity and quality will therefore be managed

as close as practicable to where rainfall lands within the development, before runoff is conveyed to the attenuation facilities. Rainwater harvesting from building roofs (Section 6) forms part of this source control approach.

The overarching design objective is that post-development discharges from the site are reduced to pre-development levels for storm events up to the 1:20-year recurrence interval, thereby protecting downstream properties and watercourses against increased flooding and erosion.

The catchment area is less than 15 km², therefore the Rational Method is used to determine the runoff as per the SANRAL Drainage Manual. The table below indicates the design return periods applied to this development.

Table 1: Design Return Periods

Return Period	Design Objective
1 in 5 Year	Minor storms for stormwater conveyance design (pipes and channels)
up to 1 in 20 Year	Major storms for stormwater runoff control to protect downstream properties from fairly frequent nuisance storm events (reduced to pre-development level)

5.4 RAINFALL DATA

The mean annual precipitation (MAP) from the nearest rainfall station in Mossel Bay (Latitude 34°11', Longitude 22°08') is 550 mm. The 24-hour design rainfall depths are summarised in Table 2 below.

Table 2: 24-Hour Rainfall Data

Return Period	1 in 2 year	1 in 5 year	1 in 10 year	1 in 20 year	1 in 50 year	1 in 100 year
24-hour rainfall, Mossel Bay station (mm)	12.5	17.5	20.0	27.5	35.0	42.5

5.5 CATCHMENT DELINEATION AND RUNOFF CALCULATIONS

The development was delineated into catchments on the basis of land use and topography. The greater Mossdustria Development catchment measures approximately 70 ha and excludes the conservation area and the Motorsport Business Development. The Motorsport Arena (33 ha) and the Alternative Energy Area (22 ha) form part of the greater Mossdustria Development catchment and were additionally analysed as discrete sub-catchments to inform the local sizing of attenuation facilities. The Motorsport Business Development (0.8 ha) drains separately and was analysed as an independent catchment.

The Rational Method was used to estimate peak runoff from the various land use zones within the Mossdustria development. Runoff coefficients were determined by surface cover type for both the pre-development and post-development condition, and adjusted per return period in accordance with the SANRAL Drainage Manual. The time of concentration reduces significantly in the developed condition due to surface hardening

and formalised conveyance. The catchment characteristics adopted in the calculations are summarised in Table 3.

Table 3: Catchment Characteristics

Catchment	Area (ha)	Pre-Dev C (1:2–1:100)	Pre-Dev Tc (h)	Post-Dev C (1:2–1:100)	Post-Dev Tc (h)
Mossdustria Development*	70	0.12 – 0.29	1.62	0.79 – 0.98	0.74
Motorsport Arena	33	0.13 – 0.31	1.34	0.83 – 1.00	0.57
Alternative Energy Area	22	0.13 – 0.30	1.46	0.51 – 0.69	1.01
Motorsport Business Development	0.8	0.12 – 0.29	0.84	0.83 – 1.00	0.22

*Area does not include the conservation area and the Motorsport Business Development. The Motorsport Arena and Alternative Energy Area are sub-catchments of the Mossdustria Development catchment.

The resulting peak flows for the pre-development and post-development conditions are summarised in Table 4 and Table 5 respectively for recurrence intervals of 1:2 years to 1:100 years.

Table 4: Pre-Development Peak Runoff (m^3/s)

Catchment	1 in 2 year	1 in 5 year	1 in 10 year	1 in 20 year	1 in 50 year	1 in 100 year
Mossdustria Development	0.30	0.42	0.56	0.83	1.50	2.32
Motorsport Arena	0.17	0.23	0.31	0.46	0.84	1.30
Alternative Energy Area	0.10	0.14	0.19	0.29	0.52	0.80
Motorsport Business Development	0.005	0.007	0.010	0.014	0.026	0.040

Table 5: Post-Development Peak Runoff (m^3/s)

Catchment	1 in 2 year	1 in 5 year	1 in 10 year	1 in 20 year	1 in 50 year	1 in 100 year
Mossdustria Development	3.18	4.19	5.16	6.98	10.03	12.86
Motorsport Arena	1.81	2.39	2.94	3.98	5.71	7.33
Alternative Energy Area	0.54	0.71	0.88	1.21	1.77	2.33
Motorsport Business Development	0.07	0.09	0.11	0.15	0.22	0.28

A 20-year return period was selected for the stormwater runoff control design, in accordance with municipal guidelines for regional and critical infrastructure. Table 6 indicates the increase in stormwater runoff in the development area during a major storm.

Table 6: Major Storm Runoff (1:20-Year)

Catchment	Size (ha)	Pre-Development Runoff (m^3/s)	Post-Development Runoff (m^3/s)	Difference (m^3/s)
Mossdustria Development*	70	0.830	6.982	6.152
Motorsport Arena	33	0.464	3.977	3.513
Alternative Energy Area	22	0.285	1.206	0.921
Motorsport Business Development	0.8	0.014	0.154	0.140

*Area does not include the conservation area and the Motorsport Business Development.

If unmitigated, the development would increase the 1:20-year peak discharge from the main catchment approximately eight-fold. Attenuation of post-development flows to pre-development levels is therefore an essential component of the stormwater management strategy.

5.6 ATTENUATION AND STORAGE PONDS

Storage and attenuation ponds are proposed for all portions of the development excluding the upper part of the industrial extension, which is assumed to connect directly to existing municipal stormwater infrastructure due to its proximity to the established Mossdustria network.

The design objective of the storage ponds is to attenuate peak stormwater flows from developed areas during a 1:20-year storm event, reducing the risk of downstream flooding and erosion. A storage-based verification was undertaken in which pond inflow volumes were computed for storm durations ranging from 5 minutes to 4 hours, with the pond outflow limited to the pre-development peak flow of the corresponding recurrence interval. The resulting required storage volumes are summarised in Table 7.

Table 7: Required Attenuation Storage Volumes

Catchment	1:20-Year Storage (m^3)	1:50-Year Storage (m^3)	1:100-Year Storage (m^3)
Mossdustria Development	23 770	27 300	30 230
Motorsport Arena	11 160	12 750	14 060
Alternative Energy Area	4 130	4 630	5 020
Motorsport Business Development	244	276	301

The ponds required for the development, excluding the Motorsport Business Development area, must provide a total storage capacity of approximately 24 000 m^3. To optimise stormwater management, areas within the track layout, particularly in the loop sections, will be repurposed as storage ponds. This integration allows stormwater management to be seamlessly incorporated into the motorsport design. The ponds are not expected to exceed depths of 1 metre, though final dimensions will be determined during the detailed design phase. Additionally, a small outflow pond is proposed for the south-western corner of the site to facilitate the controlled release of stormwater and to support overall

stormwater management efforts. This pond will also provide an opportunity to store and reuse stormwater for non-potable purposes, such as cleaning and waterborne sanitation.

An existing pond is located immediately south of the project boundary. It is recommended that a thorough assessment be conducted to evaluate whether this pond can be integrated into the proposed stormwater management system, potentially enhancing its capacity and efficiency.

For the Motorsport Business Development area, a smaller pond with a storage capacity of approximately 250 m³ is required, with a surface area of approximately 170 m². This pond is proposed near the south-eastern boundary, adjacent to the main entrance.

5.7 CONVEYANCE INFRASTRUCTURE

The minor (piped) stormwater system will be designed for the 1:5-year storm event in accordance with Table 1. To efficiently transfer stormwater from developed areas to the storage ponds, a network of approximately 7 km of 450 mm diameter concrete pipes is proposed to be utilised throughout the site.

For storm events exceeding the capacity of the minor system, overland escape routes will be provided along road reserves and open channels, graded to convey major storm flows safely towards the attenuation ponds without ponding against buildings or trapped low points. Erosion protection and energy dissipation will be provided at all pipe and channel outlets, and pond inlets and outlets will be designed to prevent scour.

5.8 STORMWATER QUALITY AND CONTAMINATED RUNOFF

Stormwater runoff from the motorsport arena is expected to contain contaminants such as grease, oil, and fuels, which pose a risk to the surrounding environment if allowed to enter natural watercourses. To mitigate this risk, it is proposed that stormwater from this area be collected and directed into an oil separation tank designed to separate and remove oil, grease, and fuel residues from the water. Following this treatment, the clarified water will be discharged into the main stormwater detention pond for further management.

The separation of clean and contaminated runoff at source is central to the water quality strategy. Clean roof runoff will be harvested or discharged directly to the attenuation system (Section 6), while runoff from trafficked and operational surfaces such as the pit lanes, workshops, fuel storage and refuelling areas will be bunded and routed through the oil separation facility. Limiting the contaminated catchment in this manner reduces the required treatment capacity.

Source controls such as permeable pavements in parking areas, grassed infiltration strips, and litter/silt traps at stormwater inlets in the industrial and business areas are recommended to further improve runoff quality and reduce runoff volumes, subject to confirmation of soil permeability by the geotechnical investigation.

6 RAINWATER HARVESTING FROM BUILDINGS

6.1 OVERVIEW

Rainwater harvesting entails the capture, storage and reuse of rainfall runoff from building roofs before it enters the stormwater system. Roof runoff is the cleanest runoff stream

generated within a development and is well suited to non-potable reuse with minimal treatment. Rainwater harvesting supports the “Source & Local Control” SuDS approach adopted for this development, reduces the potable water demand on the Bartelsfontein supply zone, and reduces the volume and frequency of stormwater discharges from the site.

The development is well suited to rainwater harvesting: the industrial and motorsport buildings offer large, uninterrupted roof areas; the demand for non-potable water (wash-down, dust suppression, irrigation and toilet flushing) is significant; and Mossel Bay receives rainfall throughout the year, which improves the reliability of a harvesting system relative to strongly seasonal rainfall regions.

6.2 HARVESTABLE ROOF AREA AND INDICATIVE YIELD

The indicative annual yield was estimated as the product of the roof plan area, the MAP of 550 mm, and an overall collection efficiency of 0.75. The collection efficiency allows for a roof runoff coefficient of approximately 0.90 together with losses associated with first-flush diversion, screening and tank overflow. Roof coverage ratios were assumed per land use and must be refined once building designs are available. Table 8 summarises the indicative yields.

Table 8: Indicative Rainwater Harvesting Yields

Land Use	Site Area (ha)	Assumed Roof Coverage	Roof Area (m^2)	Indicative Annual Yield (m^3)	Average Daily Equivalent (kl/day)
Industrial Development	13	50%	65 000	26 810	73.5
Motorsport Arena buildings (pits, grandstands, workshops)	–	–	20 000	8 250	22.6
Motorsport Workshop	0.8	60%	4 800	1 980	5.4
Motorsport Business Development	0.1	60%	600	250	0.7
TOTAL			90 400	37 290	102.2

The Motorsport Arena roof area is a preliminary allowance for the pit building, grandstands and ancillary structures and must be confirmed during the architectural design of the arena facilities.

An indicative total yield in the order of 37 000 m^3 per annum (an average of approximately 100 kl/day) is therefore potentially available from building roofs. For context, this equates to approximately 15% of the total daily water demand of 689 kl/day estimated in the Civil Engineering Services Report, and on average approximately 45% of the 169 kl/day demand of the industrial development, if reused for non-potable purposes. Rainfall is variable, and the actual usable yield will depend on the coincidence of rainfall and demand and on the storage provided; a monthly water balance per building or precinct must be undertaken during detailed design.

6.3 STORAGE AND SYSTEM COMPONENTS

A typical building-scale rainwater harvesting installation will comprise gutters and downpipes sized in accordance with SANS 10400-R, leaf screens at gutter or downpipe level, first-flush diverters to discard the initial contaminated runoff of each event, storage tanks (modular polyethylene tanks or ground-level concrete reservoirs, depending on building scale), and a pump and filtration set appropriate to the intended end use. Where rainwater supplements a reticulated non-potable system, a potable water top-up connection with an appropriate air gap and backflow prevention must be provided in accordance with SANS 10252-1. All tank overflows must discharge to the site stormwater system, ultimately draining to the attenuation ponds.

As initial sizing guidance, storage in the order of 20 to 40 litres per square metre of connected roof area is suggested to bridge typical dry spells in the region, equating to an aggregate storage of approximately 1 300 to 2 600 m³ across the industrial development if fully implemented. Storage should be provided modularly per building or erf, and final tank sizes must be confirmed by the monthly water balance during detailed design.

6.4 WATER QUALITY AND REUSE APPLICATIONS

Harvested rainwater is proposed for non-potable applications, including toilet flushing, wash-down of workshops and pit areas, dust suppression, irrigation of landscaped areas and embankments, and general site cleaning. Harvested rainwater may also be considered as a supplementary source for the on-site fire water storage, subject to the approval of the municipality and the fire authority, and provided the dedicated fire storage volume remains permanently reserved.

Harvested rainwater must not be used for drinking, food preparation or ablution (other than toilet flushing) without appropriate treatment and disinfection. Non-potable pipework, taps and tanks must be clearly marked, and no cross-connection with the potable reticulation may be permitted. These requirements must be captured in the operation and maintenance procedures for each facility.

6.5 INTEGRATION WITH STORMWATER MANAGEMENT

Rainwater harvesting functions as a source control at the head of the SuDS treatment train. By intercepting roof runoff, harvesting reduces the total annual runoff volume and the frequency of discharges for small, frequent rainfall events, and keeps the cleanest runoff stream out of the contaminated-runoff treatment system, reducing the load on the oil separation facility.

For the design storm events used to size the attenuation ponds, no attenuation credit has been taken for rainwater tanks, as tanks may be full at the onset of a storm. Should dedicated attenuation airspace (a passive discharge zone above the retained water level) be incorporated in the tank designs during detailed design, a corresponding reduction in the required pond volumes of Table 7 may be motivated. The proposed south-western outflow pond similarly provides site-scale stormwater harvesting for non-potable reuse, complementing the building-scale systems.

7 CONCLUSION

The conceptual stormwater management assessment for the Mossdustria development has been undertaken in accordance with applicable industry standards and best practice guidelines, as detailed within this report.

The development will materially increase stormwater runoff: the 1:20-year peak discharge from the main 70 ha catchment increases from 0.83 m³/s to approximately 6.98 m³/s if unmitigated. Attenuation ponds with a total storage capacity of approximately 24 000 m³, integrated into the motorsport track layout and supplemented by a smaller pond of approximately 250 m³ at the Motorsport Business Development, will attenuate post-development flows to pre-development levels. Conveyance will be provided by approximately 7 km of 450 mm diameter concrete pipes with overland escape routes for major storm events.

Runoff quality will be managed through the separation of clean and contaminated runoff, bunding of high-risk operational areas, and treatment of motorsport arena runoff in an oil separation facility prior to discharge to the detention pond.

Rainwater harvesting from building roofs can yield in the order of 37 000 m³ per annum (approximately 100 kl/day on average), offsetting a meaningful portion of the development's non-potable water demand while reinforcing the source control objectives of the stormwater management strategy.

Overall, with continued data acquisition and detailed hydraulic design, stormwater within the Mossdustria development can be managed sustainably, with minimal adverse effects on the municipal services and limited impact on the environment and neighbouring properties.

8 RECOMMENDATIONS

It is recommended that the following studies and actions be carried out:

1. Topographical and As-Built Survey

- Accurately define drainage patterns, flow paths and earthwork quantities, and inform detailed stormwater design and attenuation pond placement.
- Map all existing civil services including pipes, manholes, culverts, drains, and roads.
- Capture natural features such as earth dams, streams, wetlands, and depressions.
- Provide precise spot heights and contours with preferably ≤0.5 m intervals.

2. As-Built Services Verification

- Confirm the capacity, condition, pipe diameters and invert levels of the existing municipal stormwater infrastructure at the proposed connection point of the industrial extension.

3. Geotechnical Investigation

- Confirm soil and subsoil conditions for attenuation pond foundations, embankment stability, and building footprints.

- Assess soil permeability, groundwater levels, and clay layer continuity, especially considering existing natural ponding and earth dams on site.
- Guide design requirements such as pond lining, infiltration capacity, and structural stability to mitigate construction risks.

4. Stormwater Management Plan Updates

- Incorporate refined survey data and investigation results to update catchment delineations, runoff calculations, and pond sizing.
- Finalise detailed siting, design, and sizing of attenuation/detention ponds aligned with the latest sustainable urban drainage system (SuDS) technologies.
- Integrate stormwater quality measures such as permeable pavements, infiltration systems, and pollution control devices.

5. Rainwater Harvesting Feasibility

- Undertake building-level monthly water balance assessments once building designs and roof areas are available, to confirm tank sizes and usable yields.
- Make provision for dual (potable/non-potable) reticulation, marking, and backflow prevention in the building services designs.
- Specify first-flush diversion, screening, and overflow connections to the site stormwater system for all harvesting installations.
- Investigate attenuation credits for dedicated airspace in rainwater tanks as a means of reducing attenuation pond volumes.

6. Existing Pond Assessment

- Assess the existing pond immediately south of the project boundary to evaluate whether it can be integrated into the proposed stormwater management system.



15-07-2026

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ANNEXURE A

LOCALITY PLAN

MOSSDUSTRIA DEVELOPMENT

LOCALITY PLAN



ANNEXURE B

CONCEPTUAL STORMWATER DRAWINGS



LEGEND:

EXISTING INFRASTRUCTURE

- STORMWATER PIPELINE (Ø450mm CLASS 1000)
- STORMWATER GRID INLET

PROPOSED INFRASTRUCTURE

- STORMWATER PIPELINE (Ø450mm CLASS 1000)
- STORMWATER GRID INLET
- STORMWATER KERB INLET
- STORMWATER POND
- OIL INTERCEPTOR TANK

GENERAL NOTES

No	APPROVED	AMENDMENTS	DATE
			-
T0		ISSUED FOR TENDER	-

SURVEYED		
DRAWN	H PINDA	JUNE 2025
DESIGNED	N GODOKA	JUNE 2025
CHECKED	C BEZUIDENHOUT	JUNE 2025
APPROVED		

PR REGISTRATION NO. DATE:—

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PROJECT TITLE

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STORMWATER LAYOUT PLAN

SCALE		SHEET SIZE
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TITLE : STORMWATER MANAGEMENT REPORT .....

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