

ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR

HEAVY VEHICLE PARKING DEPOT – LYDENBURG (PORTION 42 OF THE FARM ROOIDRAAI 34 JT)

Ref nr: 17/2/S24G-03/2022/23

PREPARED FOR:

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ABBREVIATIONS

DEPARTMENT OF ENERGY (DE)
ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)
INDEPENDENT ENVIRONMENTAL AUDITOR (IEA)
ENVIRONMENTAL CONTROL OFFICER (ECO)
ENVIRONMENTAL CONSULTANT (EC)

MPUMALANGA DEPARTMENT OF AGRICULTURE, RURAL DEVELOPMENT, LAND & ENVIRONMENTAL AFFAIRS (MDARDLEA)

INFORMATION SHEET

1. Details of the Environmental Assessment Practitioner

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ENVIRONMENTAL MANAGEMENT PROGRAMME

2 Introduction

Lion Valley Fuel Depot appointed Lokisa Environmental Consulting CC (as independent environmental consultants), to submit an application for the rectification for the commencement of a listed, or specified activity, without an environmental authorisation in contravention of Section 24F(1) of NEMA (as amended) for the proposed development of a Heavy Vehicle Parking Depot on Portion 42 of the farm Rooidraai 34 JT, within the jurisdiction of the Thaba Chweu Local Municipality. The Mpumalanga Department of Agricultures, Rural Development, Land and Environmental Affairs (MDARDLEA) is the Competent Authority

The proposed Heavy Vehicle Parking Depot will cover ±3.8 ha of the property and will consist of the following:

- Fuelling facility (1 x 23m³ diesel fuel tank for refuelling of overnighting trucks only) /
 Maintenance workshop ±256m²
- Food store/refreshments ±18m²
- Ablution facilities ±36m²
- Proposed parking facilities for heavy vehicles

A new access road is proposed from the P171/1 (R557).

The project site is approximately 3.8km south west of Lydenburg (Mashishing), approximately 100m north of the R540 and directly south of the R577. The coordinates for the project site are: 25° 7'37.99"S; 30°24'36.20"E (Lat: -25.127219°; Long: 30.410056°)

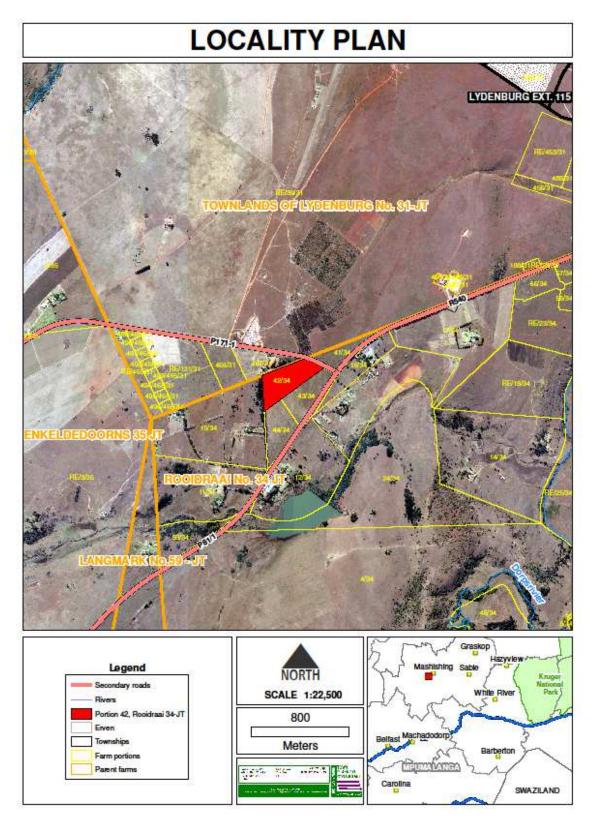


Figure 1: Locality of the site

According to Mpumalanga's Biodiversity Conservation Plan the site falls within a LN3 area and a Biodiversity Priority Natural Area (Critical Biodiversity Area).

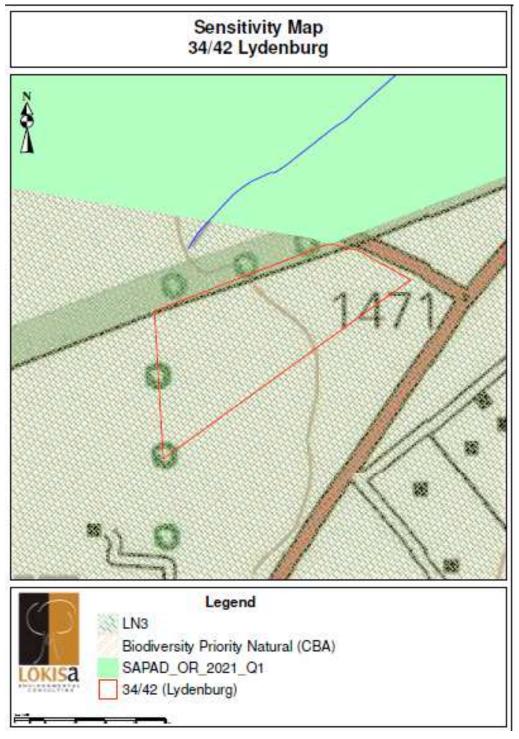


Figure 2 : Sensitivity Map

According to the Mpumalanga Biodiversity Sector Plan's terrestrial assessment the majority of the site (and the portion where the development is proposed) falls within "Other Natural Areas". According to the freshwater assessment, the site falls within an "Ecological Support Area - Important subcatchments (Fish support areas)".

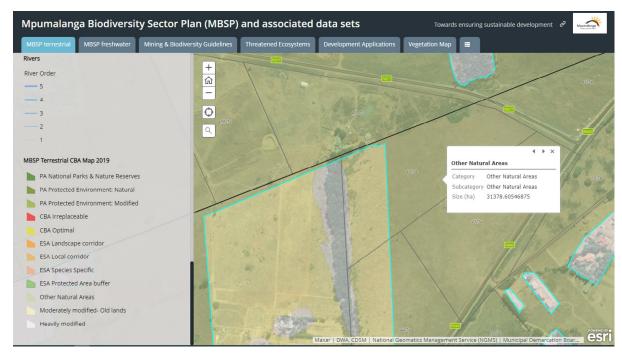


Figure 3: MBSP Terrestrial CBA Map 2019 (Other Natural Areas)

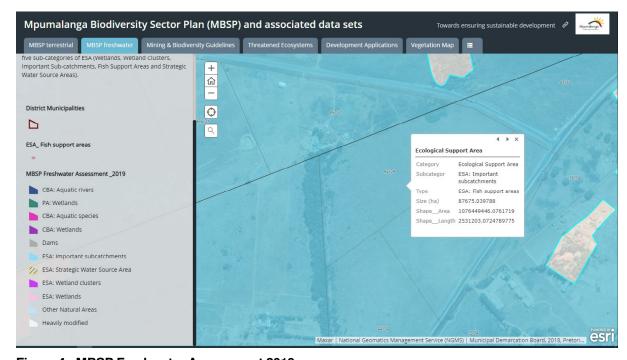


Figure 4 : MBSP Freshwater Assessment 2019

3 Objectives of the EMPr

As per As per Section (1) of Appendix 4 of Regulation 982 an EMPr must comply with Section 24N of the Act and include –

Table 1: Requirements according to Appendix 4 of GNR 982

Re	quirements according to Appendix 4 of GNR 982	Section in report
a)	Details of the EAP who prepared the EMPr and the expertise of that EAP to prepare the EMPr, including curriculum vitae.	Section 1
b)	A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.	Section 2
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.	Section 2
d)	A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including – • Planning and design; • Pre-construction activities; • Construction activities; • Rehabilitation of the environment after construction and where applicable post closure; • Where relevant, operation activities.	Section 4
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 — • Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; • Comply with any prescribed environmental management standards or practices; • Comply with any applicable provisions of the Act regarding closure where applicable; • Comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	Section 5
g)	The method of monitoring the implementation of the impact management actions as mentioned in the above paragraph (f);	Section 12
h)	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 12
i)	An indication of the persons who will be responsible for the implementation of the impact management actions;	Section 6 and 12
j)	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 12
k)	The mechanism for monitoring compliance with the impact	Section 6

	management actions contemplated in paragraph (f);	
l)	A program for reporting on compliance, taking into account the	Section 7
	requirements as prescribed by the Regulations;	
m)	An environmental awareness plan describing the manner in which -	Section 8
	• The applicant intends to inform his or her employees of any	
	environmental risk which may result from their work; and	
	Risks must be dealt with in order to avoid pollution or the	
	degradation of the environment; and	
n)	Any specific information that may be required by the competent	-
	authority.	

4 A description of the Impact Management Outcomes

The purpose of the EMPr is to act as an instrument to be used by the Applicant to ensure sound environmental practices are incorporated during the construction and operation of the development.

This EMPr is a detailed programme for the implementation of the mitigation measures to minimise negative environmental impacts during the life-cycle of the development The EMPr contributes to the preparation of the contract documentation by developing clauses to which the contractor must adhere for the protection of the environment. The EMPr specifies how the construction of the project is to be carried out and includes the actions required for the Post-Construction Phase to ensure that all the environmental impacts are managed for the duration of the project's life-cycle.

The EMPr is to be implemented in a co-operative spirit with all parties (Applicant, Contractor, affected parties) involved in the setting of environmental objectives and practices.

Table 2 below provides a summary of the identified impacts and their pre-mitigation and post mitigation impact significance rating scores as per the Environmental Impact Report for the following phases of the proposed development-

- Construction phase;
- Operational phase;

Table 2: Significance Rating for the construction and operational phase for Alternative 1 and Alternative 2

Potential Impacts	Significance rating of impacts	Significance rating of impacts after mitigation	
CONSTRUCTION PHASE			
1.1 Dust /Air pollution	Low	Very Low	

Potential Impacts	Significance rating of impacts	Significance rating of impacts after
	rating of impacts	mitigation
2.1 Visual Impacts and light pollution	Very Low	Very Low
2.2 Bulk earthworks	Very Low	Very Low
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Medium	Low
3.2 Soil Pollution	Low	Very Low
3.3 Disturbance of surface geology for development foundations	Low	Very Low
3.4 Geotechnical Constraints	Low	Very Low
4.1 Site clearing and the removal of vegetation	Low	Low
4.2 Degradation, destruction of habitats/ ecosystem, loss of natural	Low	Low
vegetation/ wildlife		
4.3 Impacts on fauna and flora and loss of RDL faunal and floral species	Low	Low
4.4 Invasive Species	Medium	Low
5.1 Storm water flow and drainage	Medium	Low
5.2 Impact on watercourse	Medium	Low
6.1 Noise / vibration	Very Low	Negligible
7.1 Safety and Security	Medium	Low
7.2 Economic opportunities	Positive -Medium	Positive – Medium
7.3 Hygiene	Very Low	Very Low
8.1 Destruction of cultural / heritage sites	Insignificant	Insignificant
9.1 Traffic – Construction vehicles	Low	Very Low
10.1 Waste	Very Low	Very Low
10.2 Pressure on existing infrastructure and services	Very Low	Very Low
OPERATIONAL PHASE		
1.1 Air pollution	Low	Very Low
2.1 Alien invasion	Low	Very Low
2.2. Loss or impact on Wildlife	Low	Very Low
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	High	High
3.2 Soil Pollution	High	Medium
4.1 Noise	Low	Low
5.1 Socio-economic impact	High (Positive)	High (Positive)
4.2 Economic opportunities	Low (Positive)	Low (Positive)
6.1 The building may be visually intrusive.	Medium	Low
7.1 Safety and Security:	Medium	Low
8.1 Hydrocarbons spilled from storage tanks and possible small spills of oil,	Medium	Low
diesel and petrol		
8.2 Storm Water and Drainage	High	Medium
9.1 Traffic – vehicles from and to the site	Medium	Low
9.2 Access to the proposed development	Medium	Low
10.1 Visibility and accessibility	Medium	Low
11.1 Waste	Medium	Low
11.2 Conservancy Tanks	Medium	Low
11.3 Pressure on existing infrastructure and services	Medium	Low
12.1 Fuel storage and handling facilities	High	Medium
12.2 Emergency preparedness	Medium	Low

A description of the proposed impact management actions

The specifications outlined in the EMPr are applicable to all activities undertaken by all persons involved in the execution of the works, including sub-contractors, the workforce and suppliers for the duration of the activities for the development.

In order to attain the impact management outcomes as outlined in Section 4 the EMPr is to address issues in the following manner:

The objective of the EMPr is to address the following issues:

- 1. Environmental Management considerations are implemented from the start;
- 2. Precautions against damage are taken timely, and
- 3. Impacts of the development on the environment are minimised.

6 Implementation of the EMPr

6.1 The Applicant

- 6.1.1 The overall responsibility for ensuring compliance lies with the Applicant.
- 6.1.2 The Applicant shall ensure that the Contractor and all staff members, sub-contractors and suppliers understand and adhere to the EMPr.
- 6.1.3 The Applicant shall ensure that all sub-contractors and suppliers are contractually bound to adhere to the EMPr and Environmental Code of Conduct.

6.2 Contractor

The Contractor, including all sub-contractors, shall comply with the specifications in the EMPr.

A representative of all sub-contractors will receive a copy of the EMPr.

A representative of each sub-contractor will be required to sign the Environmental Code of Conduct to give assurance that they understand the EMPr and that they undertake to comply with conditions therein.

7 Environmental Reporting Procedures

An Environmental Incidents Register and an Environmental Complaints Register will be in place and will be maintained by the Applicant. Upon occurrence of non-compliance or a complaint of an environmental nature the incident will be recorded in the relevant register.

8 Environmental Awareness Training/Induction

The Applicant will be responsible for putting in place an Environmental Awareness Training Programme for all staff members. Before commencing with any work, all staff members shall be briefed about the

Environmental Code of Conduct. After being briefed about the contents of the Environmental Code of Conduct, staff members shall sign an Environmental Training register as proof of their training.

9 Environmental Control Measures

The EMPr outlines measures to be implemented in order to minimise any potential environmental degradation associated with the construction activities. It should serve as a guide for the Contractor and any workforce on their roles and responsibilities concerning environmental management on the construction site and provide a framework for environmental monitoring throughout the construction period.

Measures to control potential environmental impacts during the operational phase are specified. Except where otherwise stated, all these control measures will apply throughout the construction period and, as part of the project contract, the Contractor shall adhere to these measures at all times.

10 Statutory, Legal and other requirements

The following sources of South African Law have been identified and will form the basis of the EMPr:

- 10.1 Constitution of the Republic of South Africa, Act 108 of 1996
- 10.2 National Environmental Management Act 107 of 1998 (NEMA)
- 10.3 National Water Act 36 of 1998
- 10.4 Water Services Act, 1997 (Act 108 of 1997)
- 10.5 Conservation of Agricultural Resources Act 43 of 1983
- 10.6 National Monuments Act 28 of 1969
- 10.7 Physical Planning Act 125 of 1991
- 10.8 National Environment Management: Air Quality Act, 2004 (Act 39 of 2004)
- 10.9 Atmospheric Pollution Prevention Act 45 of 1965
- 10.10 Hazardous Substances Act 15 of 1973
- 10.11 Minerals Act 50 of 1991
- 10.12 The Minerals and Petroleum Resources Development Act, 2002 (Act no. 28 of 2002)
- 10.13 Health Act 63 of 1977
- 10.14 Roads Traffic Act 29 of 1989
- 10.15 Occupational Health and Safety Act 85 of 1993
- 10.16 Soil Conservation Act 76 of 1969
- 10.17 Standards Act 30 of 1982
- 10.18 National Heritage Resources Act 1999 (Act 25 of 1999) (NHRA)

10.19 Fire Services Act (Act 99 of 1956) National Heritage Resources Act, 1999 (Act 25 of 1999).

11 Environmental Standards

11.1 Water Quality Standards

The National Water Act 1998 (Act 36 of 1998)

The aim of this Act is to provide for the fundamental reform of the law relating to water resources; to repeal certain laws; and to provide for matters connected therewith. The quality of both the surface and underground water should be protected during all the phases of the development.

The following standards and guidelines should be adhered to at any time during the development:

☐ The South African Water Quality Guidelines, DWAF, Department of Health & Water Research Commission, 2nd edition 1999, a set of guidelines for water pertaining to the respective areas of domestic, recreational, industrial and agricultural use.

11.2 Noise Standards

The following standards will be used for this purpose:

- □ SABS 0103:1994 The Measurement and Rating of Environmental Noise with respect to Annoyance and to Speech Communication
- SABS APR 020:1992 Sound Impact Investigations on Integrated Environmental Management.

11.3 Air Quality Standards

The Atmospheric Pollution Prevention Act 1965 (Act 45 of 1965)

The aim of this Act is to provide for the prevention of pollution to the atmosphere and for matters incidental thereto. This Act will have bearing on the project during the different stages thereof. Sources of air pollution during the construction may include exhaust fumes as a result of the usage of heavy vehicles.

12 Environmental Management Programme

The following tables form the core of this EMPr for the construction and operational phases of this development. These tables should be used as a checklist on site.

Table 2: Management Plan - Construction Phase

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
CONSTRUCTION CAMP AND RELATED ACTIVITIES Location of	Access Control	 Construction related traffic to and from site to be minimised. Access to construction site to be controlled. Only existing roads to be used by vehicles during construction. All vehicle and machinery tracks and disturbed areas should be rehabilitated immediately after the construction phase. 	Contractor	Ongoing by Contractor.Twice a monthMonthly report
construction site office and related buildings. Access control. Ablution facilities	Provision and control of ablution facilities	 The Contractor shall make available safe drinking water fit for human consumption at the construction camp and all other working areas. Washing and toilet facilities shall be provided on site and in the construction camp. At least 1 toilet must be available per 15 workers using the construction camp. Toilet paper must be provided and must be available at all times. The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately. The chemical toilets must be emptied on a regular basis. 	Contractor	 Ongoing by Contractor. Twice a month Monthly report
AIR QUALITY The generation of dust associated with construction activities & earthworks.	Limitation of dust during the construction phase.	 Dust generation should be kept to a minimum. Dust must be suppressed at construction areas during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution. Excavating, handling or transporting erodible materials in high wind or when dust plumes are visible must be avoided. All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials. No burning of refuse or vegetation is permitted. 	• Contractor • ECO	OngoingTwice a monthMonthly report

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
VISUAL Visual intrusion and Light intrusion – Lights from the contractor's camp and construction site could be visually intrusive.	Minimise Visual intrusion and light pollution	 Any temporary storage, lay-down areas or accommodation facilities to be setup in existing built-up areas or disturbed areas only. Ensure small footprint during construction phase. Site development to be limited to footprint area. The construction camp must be located as far from residential properties as possible. Construction / management activities must be limited to the daylight hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays. Light pollution must be minimised on the project site Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring residents, disturb wildlife, or interfere with road traffic. Outside lights will have to be downward shining (eyelid type), low wattage and should not be positioned higher than 1 m above the ground surface. Low flux and frequency lighting must be utilised. 	Contractor	Ongoing by Contractor. Twice a month Monthly report
BULK EARTHWORKS Deep cuttings, high embankments, disposal of spoil and excavations cause local changes to topography	Reduce changes to topography	 Avoid development on excessively steep slopes. Avoid cutting steep embankments Provide the necessary erosion protection measures. Disturbed surface areas in the construction phase to be rehabilitated. No open trenches to be left. No mounds of soils created during construction to be left. All construction material, equipment and any foreign objects brought into the area by contractors to be removed immediately after completion of the construction phase. 	Contractor	Ongoing by Contractor Twice a month Monthly report
GEOLOGY AND SOILS Soil erosion, loss of topsoil, deterioration of soil quality	Minimise soil erosion, deterioration of soil quality	 Appropriate erosion and storm water management structures must be installed around the construction site. Once earthworks are complete, disturbed area are to be stabilised with an appropriate approved method. Disturbed surfaces to be rehabilitated with locally indigenous grass species. No open trenches to be left. No mounds of soils created during construction to be left. Soils 	Contractor	Ongoing by ContractorTwice a monthMonthly report

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
Disturbance of surface geology for development foundations / Geotechnical Constraints		around erected poles to be levelled and sculptured to the original contours of the surrounding soils. • Adherence to comments and recommendations of engineer		
POLLUTION Soil, surface and ground water pollution.	Minimise soil, surface and ground water pollution	 Ensure correct position of construction camps, equipment yards, refuelling depots, concrete batching plant etc. to avoid areas susceptible to soil and water pollution. Ensure appropriate handling of hazardous substances Remediate polluted soil. All construction vehicles, plant, machinery and equipment must be properly maintained to prevent leaks. Plant and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site or campsite area. Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants. Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. Vehicles to be used during the construction phase are to be kept in good working condition and should not be the source of excessive fumes. Fuels and chemicals must be stored in adequate storage facilities that are secure, enclosed and bunded. 	• Contractor • ECO	Ongoing by Contractor Twice a month Monthly report
FAUNA AND FLORA Site clearing and the removal of vegetation 4.2 Degradation, destruction of habitats/	Minimise loss of biodiversity	The site has been cleared.No mitigation possible.	-	-
ecosystem, loss of natural vegetation/				

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
wildlife				
4.3 Impacts on fauna and flora and loss of RDL faunal and floral				
species				
INVASIVE SPECIES	Minimise encroachment of invasive species	A weed control programme should be implemented in the project area.	Contractor ECO	Ongoing by ContractorTwice a monthMonthly report
HYDROLOGY	Management of storm water flow and	A Stormwater Management Plan to be compiled and submitted together with building plans for approval.	Contractor ECO	Ongoing by Contractor.
Storm water flow and drainage	drainage	• The recommendations of the Stormwater Management Plan to adhered to.		Twice a monthMonthly report
		 The proposed development's storm water to be adequately managed. During the construction phase of the development, temporary silt 		
		fences can be erected to prevent silt from the construction process contaminating the pre-development storm water run-off		
		routes and pre-existing storm water systems down the road. A typical fence consists of a piece of synthetic filter fabric		
		(geotextile) stretched between a series of wooden or metal fence stakes along a horizontal contour level. The stakes are installed		
		on the downhill side of the fence, and the bottom edge of the fabric is trenched into the soil and backfilled on the uphill side.		
		The storm water slowly passes through the fence while depositing its sediments on the uphill side of the fence. The fence is not		
		designed to concentrate or channel storm water. The fence is installed on a site before soil disturbance begins, and is placed		
		down-slope from the disturbance area.Proper infrastructure will also ensure that there is minimal erosion		
		and siltation.The stormwater run-off needs to be designed so that stormwater		
		is attenuated and released in a dispersed manner not at a		

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
		 concentrated point, which will help the current and future situation where unnatural wetlands are being promoted. Carefully monitoring of construction is essential to locate and mitigate any erosion observed speedily. Investigations must be conducted after every rain downpour. Any problems need to be rectified immediately to avoid the problem escalating. 		
IMPACT ON WATERCOURSE	Prevent degradation of the watercourse	 The closest watercourses to the study site are tributaries of the Dorpsrivier situated approximately 95m and 600m north and south-east of the project site respectively. Appropriate erosion and storm water management structures must be installed around the construction site. Careful monitoring of construction is essential to locate and speedily mitigate any erosion observed. 		Daily by contractorTwice a monthMonthly report
Noise as a result of construction activities	Reduce noise from construction activities impacting on neighbours.	 Noise levels shall be kept within acceptable limits, and construction crew must abide by National Noise Laws and local by-laws regarding noise. No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. Construction / management activities involving use of the service vehicle, machinery, hammering etc, must be limited to the hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays; no noisy activities may take place on Sundays or Public Holidays. Activities that may disrupt neighbours (e.g. delivery trucks, excessively noisy activities etc.) must be preceded by notice being given to the affected neighbours at least 24 hours in advance. Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained properly during site operations. 	• Contractor • ECO	 Daily by contractor Twice a month Monthly report
SAFETY AND SECURITY	Ensure social well- being of general public, site property,	Signs should be erected on all entrance gates to the site camp indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime.	Contractor	Ongoing by Contractor.Twice a month

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
Impacts on social well-being of general public, site property, construction personnel, surrounding properties.	site personnel and surrounding properties.	 The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations All structures that are vulnerable to high winds must be secured (including toilets). Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times. The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions for this purpose when works are undertaken on or near public roads. Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.). All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA). An environmental awareness training programme for all staff members shall be put in place by the Contractor. Before commencing with any work, all staff members shall be appropriately briefed about the EMP and relevant occupational health and safety issues. All construction workers shall be issued with ID badges and clearly identifiable uniforms. Access to fuel and other equipment stores is to be strictly controlled. Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life and the environment are avoided. Adequate emergency facilities must be provided for the treatment of any emergency on the site. The nearest emergency service provider must be identified during 		Monthly report

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
ECONOMIC OPPORTUNITIES Employment opportunities for local	Make provision for local employment where possible	all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times. • The Contractor must have a basic spill control kit available at each construction crew camp and around the construction site. The spill control kits must include absorptive material that can handle all forms of hydrocarbon as well as floating blankets / pillows that can be placed on water courses. • The Contractors site must be located on the high side of the site so any leakages or spillages will be contained on site. • Hunting, camping, the collection of wood and any other activities must be prohibited from the neighbouring unoccupied properties. • Make use of local labour. • Provide clear and realistic information regarding employment opportunities and other benefits for local communities in order to prevent unrealistic expectations. • Provide skills training for construction workers.	Contractor Project manager	OngoingTwice a monthMonthly report
HYGIENE	Ensure proper hygiene on site Avoid unhealthy working conditions on project site.	 The Contractor shall make available safe drinking water fit for human consumption at the site offices and all other working areas. Washing and toilet facilities shall be provided on site and in the Contractors camp. Adequate numbers of chemical toilets must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 20 workers using the camp. Toilet paper must be provided. The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately. The chemical toilets must be emptied on a regular basis. HIV AIDS awareness and education should be undertaken by all Contractor staff. 	Contractor	Ongoing Twice a month Monthly report

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
GRAVES, ARCHAEOLOGICAL AND OTHER HERITAGE SITES Destruction of	Protection of Archaeological and heritage sites.	A Heritage Impact Assessment is required and will be conducted.	Contractor ECO	Ongoing by Contractor.Twice a monthMonthly report
cultural/heritage sites. TRAFFIC Disturbance caused by construction traffic.	Prevent construction vehicles from disturbing the general public and environment.	 The contractor is to ensure traffic safety at all times and shall implement road safety precautions. Signs should be erected on all entrance gates Speed limits should be implemented and adhered to. Care must be taken with heavy machinery used on the project. All access roads used during construction must be monitored and maintained. 	Contractor	Daily by contractor Twice a month Monthly report
SOLID WASTE MANAGEMENT Refuse and waste produced during the construction phase. Dumping of building material, rubble and any material used during construction or rehabilitation. Stockpiled material	Control dumping of building material, rubble and any material used during construction or rehabilitation. Ensure waste is appropriately stored, handled ad safely disposed of at a licensed waste facility.	 Adequate number of waste disposal receptacles is to be positioned at strategic locations within the development. No burning of waste. Waste will be collected and removed off-site to a registered waste site. Fires and camp sites should be prohibited on Site. Excavated soils, rocks and or building waste material may not be simply dumped in any open veld, neighbouring properties, or even on site. All hazardous materials must be stored appropriately to prevent these contaminants from entering the water environment; All excess materials brought onto site for construction to be removed after construction. 	Contractor	 Ongoing by Contractor. Twice a month Monthly report
INFRASTRUCTURE AND SERVICES	Minimise pressure on infrastructure and services.	Availability and Integrity of existing services to be ensured.	Contractor	Monthly by contractor Twice a month Monthly report
CONCRETE AND CEMENT	Concrete spills must be contained on site	• Cement preparation areas or bulk cement delivery areas must be located prior to construction.	Contractor ECO	Ongoing by Contractor.

IMPACT	OUTCOME/ OBJECTIVE	MITIGATION MEASURES/ACTIONS	RESPONSIBILITY	MONITORING FREQUENCY
PREPARATION AND HANDELING The use and preparation of concrete on site has the potentia to impact negatively on the environment.		 Do not mix cement and concrete directly on the ground. After closure of batching plants and/or concrete preparation areas all waste concrete shall be removed together with contaminated soil. Waste material to be removed to a Licensed Landfill site. Waste disposal certificates must be obtained for any waste that is disposed of. 		Twice a monthMonthly report

Table 3: Management Plan - Operational Phase

ISSUE	OBJECTIVE	MITIGATION MEASURES	RESPONSIBILITY	MONITORING
				FREQUENCY
AIR QUALITY	Prevent change in ambient air quality	 Dust suppression along access road Emissions during the construction phase will mostly be in the form of dust. It is proposed that the internal circulation streets around the parking areas will be constructed with mountable kerbs and that the streets will be surfaced with either precast concrete paving blocks or asphalt surfacing to mitigate air pollution (Dust from vehicle movement). Air pollution during the operational phase is not expected however, vapor from vehicles and during the re-fuelling could occur. 	Applicant	Ongoing
ALIEN INVASION	Control alien invasive species	A weed control programme should be implemented in the project area.	Applicant	Ongoing
GEOLOGY & SOILS Soil erosion, loss of topsoil, deterioration of soil quality Soil Pollution	Prevent degradation of nearby watercourses and quality of groundwater resources	together with building plans for approval.	Applicant	Ongoing
NOISE	Minimise unacceptable levels of noise Limit impact of local noise.	 Ensure acceptable noise levels Minimal noise will be generated by the trucks at the facility during the operational phase. The design of the facility is of such a nature that it provides for an internal "ring road" for easy access and turnaround space for trucks. The trucks therefore do not have to idle or make use of their reverse signals. The facility's gates will be closed from 18:00 to 06:00 and no trucks will be allowed during this time. 	Applicant	Ongoing

ISSUE	OBJECTIVE	MITIGATION MEASURES	RESPONSIBILITY	MONITORING
				FREQUENCY
		No provision will be made for areas or opportunities for the truck drivers to socialise.		
EMPLOYMENT	Make provision for local Employment where possible.	 Implement local labour. Provide clear and realistic information regarding employment opportunities and other benefits for local communities in order to prevent unrealistic expectations. 	Applicant	Ongoing
VISUAL IMPACT	Minimise an adverse impact on the visual quality of the area because of the following: The buildings may be visually intrusive. Lights from the depot may be visually intrusive.	 The buildings must be regularly painted. Signs for advertising must conform to the standards of South African Manual for Outdoor Advertising Control (SAMOAC). All lights used for non-security purposes should be energy efficient for example compact fluorescent lights (CFL). Fluorescent lamps give five times the light and last up to 10 times as long as ordinary bulbs Areas that have been landscaped must be maintained. Light pollution must be minimised on the project site Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring residents, disturb wildlife, or interfere with road traffic. Outside lights will have to be downward shining (eyelid type), low wattage and should not be positioned higher than 1 m above the ground surface. Lights will be directed to only shine on certain areas of the project site e.g. ablution facility, corner posts and the middle of the facility. Low flux and frequency lighting must be utilised. 	Applicant	Ongoing
SAFETY AND SECURITY	Ensure proper safety and security on site	 Appropriate measures should be in place for the correct storage and handling of fuel as well as the procedures for dealing with dangerous situations. Staff should be adequately trained with respect to dealing with crime. Equipment and materials must be handled by staff that has been adequately trained. 	Applicant	Ongoing
		 Staff must be adequately updated about safety procedures. Emergency contact details for the police, Security Company and fire 		

ISSUE	OBJECTIVE	MITIGATION MEASURES	RESPONSIBILITY	MONITORING
				FREQUENCY
		department must be readily available.		
HYDROLOGY Hydrocarbons spilled from storage tank and possible small spills of oil, diesel and petrol spilled on paved surfaces have the potential of contaminating groundwater.	Prevent ground water pollution	 Strict procedures for the management of the site must be developed and adhered to. An emergency accidental spillage plan must be in place and workers must be trained to handle such accidents. Leak detection measures/systems must be implemented in all fuel storage and transmission lines and tanks. Fuel dispenser pumps must be located on a hardened surface (to contain spillages) which drains into a common drain. This drain must feed onsite oil and water separator such as a Zorbit Grease Trap. The accumulated grease and oil must be removed by an accredited company. Chemical storage areas should be sufficiently contained, and the use of chemicals should be controlled. Strict procedures for the management of the site must be developed and adhered to. Prevent spillages during fuel dispensing. 	Applicant	Ongoing
STORM WATER MANAGEMENT	Prevent increased runoff of storm water	 A Stormwater Management Plan to be compiled and submitted together with building plans for approval. It is proposed that the parking areas layer works will be constructed to form a tanked system which is lined with either LDPE or HDPE impervious membranes to create a 'tank' and thereby capture and store the water for reuse in grey water and irrigation systems. The impervious membrane is required to restrict water from entering the subgrade and thereby preserve groundwater quality integrity of this layer. The stormwater generated on the parking areas or are expected to be contaminated by diesel and oil spillage from the parked Heavy vehicle trucks. The proposed development's storm water to be adequately managed. 	Applicant	Ongoing
TRAFFIC	Minimise traffic congestion on		Applicant	Ongoing

ISSUE	OBJECTIVE	MITIGATION MEASURES	RESPONSIBILITY	MONITORING
				FREQUENCY
	surrounding roads.	Study.		
ACCESS	Ensure visible access to the site	 Obtain approval for access to the site. A new access road is proposed from the P171/1 (R557). 	Applicant	Ongoing
WASTE MANAGEMENT	General waste separated at source	 Sorting of waste Waste yard to be kept clean and neat Regular cleaning of waste yard so that it does not became a nuisance and terms of odour and vermin The Thaba Chweu Local Municipality is currently not providing a refuse removal service to the area where the development is situated. Arrangements will be made with Private Sector for weekly collection of domestic, hazardous and solid waste and transportation thereof to approved waste disposal sites. 	Applicant	Ongoing
CONSERVANCY TANKS	Overflow prevention	The developer will appoint and enter into an agreement with a specialist service provider to empty the conservancy tank as and when required.	Applicant	Ongoing
PRESSURE ON EXISTING INFRASTRUCTURE AND SERVICES	Minimise pressure on existing infrastructure and services	Integrity of existing services in the area to be ensured.	Applicant	Ongoing
FUEL STORAGE AND HANDLING FACILITIES	Prevention of pollution	 Product identification must be in the form of a colour-coded collar around the dip pipe, painted manhole cover and frame. Dip caps must be lockable and the seal must be flexible and not deformed. Ensure that well caps are installed and in place. Filler caps must be lockable and the seal must be flexible and not deformed. Filler coupling must be 12 tooth for petrol and 18 tooth for diesel Pump dispensers must be securely mounted 300mmfrom the edge of a pump island that is 150mm above floor level. Dispenser must be fitted with an emergency shut-off (shear) valve with stabilizer bracket in the event the dispenser is knocked over by a vehicle. 	Applicant	• Ongoing

ISSUE	OBJECTIVE	MITIGATION MEASURES	RESPONSIBILITY	MONITORING
				FREQUENCY
		 The storage area must be sloped to the collection manholes to ensure that any spillages or contaminated water would drain to the manholes. The collection manholes must pipe spillages and water to a proper oil/water separator system. An industry accepted oil interceptor system must be installed to ensure that the contaminated water would be product/oil free before discharged into the municipal sewer system. The design and construction of the oil separator must comply with the applicable standards. Leak monitoring wells must be checked on a weekly basis. Records of such tests must be kept in good working order. 		
EMERGENCY PREPAREDNESS	Ensuring safety on site	In order to minimise the injuries, losses or environmental damage that could occur as a result of an incident emergency preparedness must be addressed. This would include aspects such as: emergency planning fire petroleum product spills and leaks injuries to people incident reporting incident investigation	Applicant	Ongoing

13 Site documentation, monitoring and reporting

13.1 What needs to be monitored

- On-site sanitary facilities
- Geotechnical matters
- Community relations
- Removal of rubble
- Disposal of Material
- Construction activities
- Protection of buildings and structures
- Site Development Plan
- Construction of structures
- Progress in terms of construction programme
- Rehabilitation
- Re-vegetation
- Impact on existing infrastructure

13.2 How, what procedures

- Random inspection by the Applicant's representative.
- Reporting to by the Project Manager

13.3 Recording of Information/Data

The standard site documentation shall be used to keep records on site. All documents shall be kept on site and be made available for monitoring purposes. The documentation shall be signed by all parties to ensure that such documents are legal.

The following documentation shall be kept on site:

- Environmental Complaints register
- Environmental Incidents register
- Environmental Training register
- Copy of the Environmental Management Programme

13.4 Reporting

Who should be reported to?

Site owner

- MDARDLEA
- Council

14 Amendments to the EMPr

The EMPr is to be submitted to the MDARDLEA for approval prior to implementation. Any changes to the EMPr are to be indicated in the form of addendums.

ANNEXURE A

Environmental Code of Conduct

The Applicant is committed to ensuring that the construction of the development is done according to the highest environmental standards so that the ecological footprint of the development is minimised where possible.

The Applicant requires that all construction personnel involved in the construction process accept their responsibilities towards the EMPr and the environment. This includes all permanent, contract or temporary workers as well as any other person involved with the project or visiting the site. Ignorance, negligence, recklessness or a general lack of commitment will not be tolerated.

If you do not understand the rules you must seek assistance to ensure compliance. The following people can assist you in ensuring compliance with the EMPr.

Your Supervisor:	
Environmental Control Officer:	
Project Manager:	

Your Supervisor:

ANNEXURE B

	Environmental Complaints Register						
Name of Complainant	Contact Details	Nature of Complaint	Responsible Person	Date Action Taken	Details of Action Taken		

ANNEXURE C

Environmental Incidents Register							
Date	Incident	Action Required	Responsible Person	Action Implemented	Date Action Implemented		

ANNEXURE D

Environmental Training Register							
Company	Employee	Employee Signature	Supervisor	Supervisor Signature			
			-				
				+			
				+			