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ENVIRONMENTAL ASSESSMENT FOR
THE PROPOSED POLICE FUEL
DEPOT IN NCAUTE
ENVIRONMENTAL MANAGEMENT PLAN



MINISTRY OF SAFETY AND SECURITY



ENVIRO DYNAMICS CC

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ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
DEA	Directorate of Environmental Affairs
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ER	Employer's Representative
GG	Government Gazette
GN	Government Notice
HIV	Human Immunodeficiency Virus
I&APs	Interested and Affected Parties
kVA	Kilo volt ampere
MSS	Ministry of Safety and Security
NHC	National Heritage Council
PPE	Personal Protective Equipment
SANS	South African National Standard
TB	Tuberculosis

1 INTRODUCTION

The Ministry of Safety and Security (MSS) intends to construct a fuel depot as part of a police station in the Ncaute Village, located 60 km south of Rundu. The construction of the depot involves the following:

- The installation of two 23 m³ Underground Storage Tanks and fitted with leak detectors and observation wells. The storage tanks will be constructed according to the applicable South African National Standards (SANS) and will be housed in a concrete bunker. The bunker will have a capacity of 101 m³ (6.7 m x 6.3 m x 2.4 m) and will be lined with a fuel resistant (High Density Polyethylene) sheeting;
- One tank will store 95 octane petrol and the other diesel;
- Installation of one suction dispenser pump with 2 hoses – 1 for unleaded petrol and 1 for automotive gas oil (diesel);
- A leak-proof filler box with the capacity to contain the contents of a bulk delivery vehicle discharge hose and no less than 35 ℓ;
- All underground fuel lines will be installed in sleeves that start and end in sealed manholes;
- The dispenser pumps will be located at the centre of a 9 m X 9 m concrete platform with a canopy covering the whole area of the platform. The platform will be contoured to channel all spilled hydrocarbons to wastewater drains;
- Wastewater drains and associated pipelines will be installed on site. The drains will discharge into a three-chamber oil-water separator system to be installed on site. The capacity of the system is 2.4 m³; and
- Installation of a 100 kVA back-up generator.

An EMP is one of the most important products of an Environmental Assessment (EA) process. An EMP synthesises all recommended mitigation and monitoring measures, laid out according to the various stages of a project life cycle, with clearly defined follow-up actions and responsibility assigned to specific actors. This EMP has been drafted in accordance with the Namibian Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations (2012). This plan describes the mitigation and monitoring measures to be implemented during the following phases of the Fuel Depot development:

- Planning and Design;
- Construction;
- Operation and Maintenance; and

Decommissioning and rehabilitation is not envisaged for this development. However, in the event that this is deemed necessary, decommissioning and rehabilitation planning will need to take place and the EMP updated accordingly (see **Table 6**).

2 RESPONSIBILITIES

The responsibility for the implementation of the EMP ultimately lies with the MSS (the Developer), who is also responsible for the eventual operation of the project. The implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase of this project.

The Developer should appoint an Employer's Representative (ER) to oversee all aspects of this project (including all contracts for work outsourced) – one for the construction phase and one for the operational phase (both of these positions may be assigned to one person). The ER will in turn appoint an Environmental Control Officer (ECO) to oversee the implementation of the whole EMP (if no ECO is appointed this responsibility remains with the ER). The following positions and their respective responsibilities will be outlined below:

- Employer's Representative;
- Environmental Control Officer; and
- Contractor (Construction and Operations and Maintenance).

2.1 EMPLOYERS REPRESENTATIVE (ER)

The ER is appointed by the Developer to manage all contracts for work/services that are outsourced during the construction and operations and maintenance phases. This position may be filled by any competent MSS employee (which will most probably be the case during the operation and maintenance phase of the Fuel Depot), which has received the appropriate training. Any official communication regarding work agreements is delivered through this person. The ER should with the commencement of the project appoint a competent ECO who will represent the Developer on-site.

The ER shall assist the ECO where necessary and will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorisations and permits (see **Table 1**) have been obtained by the Contractor;
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the ECO where necessary;

- Ordering the removal of individuals and/or equipment not complying with the EMP;
- Issuing fines for transgression of site rules and penalties for contravention of the EMP; and
- Providing input into the ECO's ongoing internal review of the EMP. This review report should be submitted on a monthly basis to the Developer.

2.2 ENVIRONMENTAL CONTROL OFFICER (ECO)

The ECO should be a competent person appointed by the ER. If the ECO has no training in occupational safety and health pertaining to the management of a fuel depot, they should be sent for such training. The ECO is the Developer's on-site representative primarily responsible for the monitoring and review of on-site environmental management and implementation of the EMP by the Contractor. If no ECO is appointed the duties of the ECO fall upon the ER.

The ECO's duties include the following:

- Take responsibility for:
 - All monitoring actions listed in **Table 5** below;
 - Measuring of tank fuel levels; and
 - Management of every tank filling operation.
- Assisting the ER in ensuring that the necessary legal authorisations have been obtained;
- Maintaining open and direct lines of communication between the ER, Developer, Contractor, and Interested and Affected Parties (I&APs) with regard to this EMP and matters incidental thereto;
- Monthly site inspection of all construction areas with regard to compliance with this EMP;
- Monitor and verify adherence to the EMP (audit the implementation of the EMP) and verify that environmental impacts are kept to a minimum;
- Taking appropriate action if the specifications of the EMP are not adhered to;
- Assisting the Contractor in finding environmentally responsible solutions to problems;
- Training of all MSS personnel with regard to the Operation and Maintenance Phase mitigation measures (**Chapter 3.5**) of this EMP and continually promoting awareness of these;

- Monthly inspection to verify if new personnel have received appropriate environmental, health and safety training and training those who have not;
- Attend refresher occupational health and safety training courses pertaining to the management of a fuel depot at least once every two years;
- Advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER;
- Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the EMP; and
- Undertaking an annual review of the EMP and recommending additions and/or changes to the document.

2.3 CONTRACTOR

The Contractor is responsible for the implementation of the EMP, on-site monitoring and evaluation of the EMP. It is envisaged that various contractors will be appointed at various times and for various tasks throughout the life cycle (construction through to operation and maintenance phase) of this project. These can be broadly grouped into Construction Contractors and Operations and Service Contractors. In order to ensure sound environmental management, the relevant sections of this EMP should be included in all contracts of work outsourced, thus legally binding all appointed contractors. All contractors shall ensure that adequate environmental awareness training (see **Section E**) of senior site personnel takes place and that all construction workers and newcomers receive an induction presentation on the importance and implications of this EMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice.

The Contractor should keep records of all environmental training sessions, including names, dates and the information presented.

3 MANAGEMENT REQUIREMENTS

This EMP has been structured so as to provide its various intended recipients (Developer, ER, consulting engineers and contractors) with mitigation measures immediately applicable to their respective scopes of work. The management requirements for the various recipients carrying out work for this project are divided according to the main project phases:

- Permit and relevant legal requirements (**Table 1**);
- Planning and Design Phase requirements (**Table 2**);
- Construction Phase management requirements (**Table 3**); and
- Operation and Maintenance Phase management requirements (**Table 4**)

3.1 PERMITS AND RELEVANT LEGAL PROVISIONS

Table 1: Relevant permit and legal requirements

THEME	LEGISLATION INSTRUMENT	MANAGEMENT REQUIREMENTS	CONTACT PERSON
Archaeology	National Heritage Act 27 of 2004	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.	Rev Salomon April Tel: (061) 244 375/ 385/594
Environmental	Environmental Management Act 7 of 2007 EIA Regulations (EIAR) GN 29-30 (GG 4878)	<ul style="list-style-type: none"> The amendment, transfer or renewal of the Environmental Clearance Certificate " (EIAR, GN 29: S19 & 20). The storage and handling of dangerous goods, including petrol, diesel... in containers with a combined capacity of more than 30 cubic meters at any one location" (EIAR, GN 29: S9.4). "Construction of filling stations or any other facility for the underground or aboveground storage of dangerous goods, including petrol, diesel..." (EIAR, GN 29: S9.5). 	Dr Freddy Sikabongo/ Ms Saima Angula Tel: (061) 284 2751
Labour	Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.	Labour Law Advice: Tel: (061) 309 957
Petroleum Products	Petroleum Products and Energy Act 13 of 1990 and the Petroleum Products Regulations (PPR)	<ul style="list-style-type: none"> "No person shall possess or store any fuel except under authority of a licence or a certificate" (PPR: S 3(2)). "Every...certificate-holder shall with regard to any replacement or installation of a storage tank, or a remaining storage tank... annually not later than 28 February, duly complete Form PP/10 as set out in Annexure B..." (PPR: S46(2)). Par IV of Chapter 3 (Sections 47&48) deals with duties regarding fires and explosions, while (S 4) details measures to be taken in the event of product spills. Section 50 details provisions related to cost recovery in respect of incidents involving product spills. 	Ministry of Mines and Energy: Tel: (061) 284 8312

3.3 PLANNING AND DESIGN PHASE

Table 2: Management requirements for the Planning and Design phase

ASPECT	MANAGEMENT REQUIREMENT
Infrastructure design	<ul style="list-style-type: none"> • The design of the underground storage tank should be compliant with the South African National Standard (SANS) 1535: 2007. • The installation, modification, and decommissioning of the underground storage tanks, pumps/dispensers and pipework should be compliant with the SANS 10089-3:2010 (Edition 4). • Wastewater pipeline material should be compatible with hydrocarbon products. • Joints in pipelines should be avoided and where unavoidable joints and fittings should be in containment structures. • Leak detectors need to be installed. • Joints in wastewater pipelines (pipelines to oil-water separator) should be avoided and where unavoidable "glued fittings" as opposed to "push-in fittings" should be used. • The oil-water separator soakaway should be a surface soakaway to ensure that any hydrocarbon staining is clearly visible on the surface.
EMP implementation	<p>Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for implementation of the EMP</p>
Financial provision	<ul style="list-style-type: none"> • Financial provision for the compilation of a Waste Management Plan should be included as a cost item within tenders concerning the construction and/or operation and maintenance of the proposed development. • Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase should be included as a cost item within construction tender documents. • Financial provision for the facilitation of an induction programme for both senior, temporary construction personnel as well as subcontractors and associated personnel should be included as a cost item within tenders concerning the construction and/or operation and maintenance of the proposed development. • All fuel suppliers should have liability insurance to the value of at least \$N1 million.
Recruitment	<ul style="list-style-type: none"> • Provisions designed to maximise the use of local labour should be included within tenders concerning the construction. • A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction of the fuel depot. • Specific recruitment procedures ensuring local firms enjoy preference during tender adjudication should be included within tenders concerning the construction of the fuel depot • Provisions promoting gender equality pertaining to recruitment should be included within tenders concerning the construction of the fuel depot. • Women should be given preference for certain jobs (e.g. those jobs which require relatively less physical strength).

3.4 CONSTRUCTION MITIGATION DETAILS

The following table provides a large scale overview of all the major environmental management themes pertaining to both generic and site specific construction mitigation details. This table serves to act as quick reference, for the detailed mitigation details that follow below, for the implementation of the construction component of this EMP.

Table 3: Generic and site-specific environmental management actions for the construction phase

THEME	OBJECTIVE	MITIGATION DETAIL	
		GENERIC	SITE-SPECIFIC
Waste management	Avoid and where not possible minimise all pollution associated with construction.	Section A	N/A
Health and safety	Safeguard health and safety of labourers and general public.	Section B	N/A
Dust and noise	Avoid and where not possible minimise dust and noise associated with construction.	Section C	N/A
Environmental training and awareness	Awareness creation regarding the provisions of the EMP as well as importance of safeguarding environmental resources.	Section D	N/A
Environmental conservation	Minimise construction activity footprint and safeguard biodiversity in ecologically sensitive areas.	Section E	Section E
Employment/ Recruitment	Minimise negative conflict through legal and fair recruitment practices.	Section F	N/A
Communication with Interested and Affected Parties (I&APs)	Provide a platform for I&APs to raise grievances and receive feedback and hence minimise negative conflict	Section G	N/A
Socio-economic and Miscellaneous	Ensure due consideration is given to matters regarding the cultural and general wellbeing of the affected community and matters incidental thereto.	Section H	N/A

SECTION A: WASTE MANAGEMENT

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Waste management plan	<ul style="list-style-type: none"> • The Contractor should compile a Waste Management Plan which should address as a minimum the mitigation measures included below. • “Waste” is defined as any matter, whether gaseous, liquid or solid or any combination thereof, which is an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.
Hazardous waste	<ul style="list-style-type: none"> • All heavy construction vehicles and equipment on site should be provided with a drip tray. <ul style="list-style-type: none"> – Drip trays are to be transported with vehicles wherever they go. – Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste. • All heavy construction vehicles should be maintained regularly to prevent oil leakages. • Maintenance and washing of construction vehicles should be take place only on an impermeable surface contoured to drain into a pit, lined so as to be impermeable . • Spilled concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers. • All hazardous substances (e.g. fuel etc.) or chemicals should be stored temporarily in labelled, safe and sealable containers at a specific location on an impermeable surface, which is bunded. The bunded area should be able to contain 1.5 times the volume of the hazardous material to be stored in the bunded area.
Sewage and grey water	<ul style="list-style-type: none"> • Do not allow the sewage (black water) to be discharged directly onto open soil. • All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. • The water collected from wash basins and showers (grey water), should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. Grey water as far as possible should be recycled: <ul style="list-style-type: none"> – Used for dust suppression; and – Used to clean equipment. <p>If grey water will not be recycled it should be removed along with the black water on a regular basis.</p>
General waste	<ul style="list-style-type: none"> • The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. • No waste may be buried or burned. • Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipal) waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot. • A sufficient number of separate waste containers (bins) for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Construction labourers should be sensitised to dispose of waste in a responsible manner

ASPECT	MITIGATION MEASURE
	<p>and not to litter.</p> <ul style="list-style-type: none">• No waste may remain on site after construction is complete.• No building rubble may be stored in the road reserve.• A designated eating area should be provided for and demarcated as such. Bins should be provided for at this area.

APPENDIX B: HEALTH AND SAFETY

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION MEASURES	
HIV/AIDS and TB training	The Contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase.
Road safety	<ul style="list-style-type: none"> • All vehicles that transport materials to and from the site must be road worthy. • Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. • Loads upon vehicles should be properly secured to avoid items falling off the vehicle. • Temporary road signage indicating where heavy vehicles access the site.
Safety around excavated and work areas	<ul style="list-style-type: none"> • Excavations should be left open for an absolute minimum time. • Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unattended for more than 24 hours. • Demarcate the following areas with danger tape: <ul style="list-style-type: none"> – All excavation works; – Soil and other building material stockpiles; and – Temporary waste stockpiles. • Provide additional warning signage in areas of movement and in "no personnel" areas where workers are not active. • Work areas must be set out and isolated with danger tape on a daily basis. • All building materials and equipment are to be stored only within set out and demarcated work areas. • Only construction personnel should be allowed within work areas. • 2 fire extinguishers should be available at the fuel storage area and at the cooking shelter at the workers campsite. • Comply with all mitigation measures laid out in Section A (Waste Management mitigation details). • No person should be allowed to smoke close to fuel storage facilities • No workers should be allowed to drink alcohol during work hours. • No workers should be allowed on site if under the influence of alcohol.
Toilets and ablutions	<ul style="list-style-type: none"> • Separate toilets and shower facilities (ablutions) should be available for men and women, both at the workers campsite and at the construction site. These should clearly be indicated as such. • Toilets should be available at both the workers campsite and on the construction site : <ul style="list-style-type: none"> – 1 toilet for every 25 females. – 1 toilet for every 50 males. – Sewage waste needs to be removed on a regular basis to an approved (municipal) sewage disposal site.

ASPECT	MITIGATION MEASURE
	<ul style="list-style-type: none"> – Workers responsible for cleaning the toilets should be provided with latex gloves and masks.
Open fires	<ul style="list-style-type: none"> • No open fires may be made anywhere at the workers campsite or on the construction site. • No wood may be collected within or near the project area. The Contractor must supply wood (or other fuel) for any necessary heating purposes.
General	<ul style="list-style-type: none"> • A designated cooking shelter should be provided at the workers campsite. Gas for cooking purposes should be provided on a regular basis. • Condoms should be provided to all workers staying at the workers campsite. • All workers should have appropriate Personal Protective Equipment (PPE) and records of the distribution of PPE should be kept/maintained • Dust protection masks should be provided to workers if they complain about dust. • Potable water should be provided to all workers both at the workers campsite and on the construction site. • No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets – the chemicals are flammable). • No workers should be allowed to drink alcohol during work hours. • No workers should be allowed on site if under the influence of alcohol.

SECTION C: DUST AND NOISE

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Dust	<ul style="list-style-type: none"> • A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restrictions during applicable seasons. • Ensure that adequate ventilation is available in the event of sanding or grinding work. • Stockpiles of building materials and earth material to be kept moist or the surfaces stabilised • Limit the size of stockpiles of large quantities of soil, topsoil and other fine material. • Improve awareness of ambient air quality and consideration regarding wind speed and direction when undertaking dust generating activities
Noise	<ul style="list-style-type: none"> • Work hours should be restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas. • In the event that work is necessary outside the designated working hours, all receptors (residents or businesses within 500 m from the work areas) will need to be notified at least 2 days in advance.

SECTION D: ENVIRONMENTAL TRAINING AND AWARENESS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Environmental induction (Training)	<p>All construction workers are to undergo environmental induction (training) which should include as a minimum the following:</p> <ul style="list-style-type: none"> • Explanation of the importance of complying with the EMP. • Discussion of the potential environmental impacts of construction activities. • Employees' roles and responsibilities, including emergency preparedness. • Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities. • Explanation of the specific mitigation measures within this EMP especially unfamiliar provisions.

SECTION E: ENVIRONMENTAL CONSERVATION

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Materials camp and lay-down areas	<p>Suitable locations for lay-down areas should be identified with the assistance of the ER and the following should be considered in selecting these sites:</p> <ul style="list-style-type: none"> • The areas designated for the proposed development should be used as far possible • Second choice should be degraded land • Avoid sensitive areas (e.g. protected archaeological sites, rivers or drainage lines).
SITE-SPECIFIC MITIGATION DETAILS	
Groundwater pollution	<ul style="list-style-type: none"> • Owing to the susceptibility of the groundwater, in and around the project area, to pollution, extra care should be given to the management of hazardous substances (as outlined in Section A above). • Non-compliance with respect to the provisions contained in Section A above should be penalised/fined heavily – up to N\$ 1 000.00 per incident according to the discretion of the ER.

SECTION F: EMPLOYMENT/RECRUITMENT

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Legislation	Adhere to the legal provisions in the Labour Act (see Table 1) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the Contract.
Recruitment	<p>The Contractor should compile a formal recruitment process including the following provisions as a minimum:</p> <ul style="list-style-type: none"> • The local authority should assist with the recruitment process. • Recruitment should not take place at construction sites. • Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process. • Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns. • Clearly explain to all job-seekers the terms and conditions of their respective employment contracts (e.g. period of employment etc.) – make use of interpreters when necessary.

SECTION G: COMMUNICATION WITH INTERESTED AND AFFECTED PARTIES (I&APs)

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
<p>General communication matters</p>	<ul style="list-style-type: none"> • The ER should appoint an ECO to liaise between the Contractor, I&APs, Developer, and consultants. The appointed Contractor shall appoint a person from the construction team to take responsibility for the implementation of all provisions of this EMP. • The Contractor shall at every site meeting report on the status of the implementation of all provisions of the EMP. • The Contractor should implement environmental awareness training as stipulated in Section D. • The Contractor should list the I&APs of the project and their contact details with whom ongoing communication would be required for duration of the contract. This list, together with the Communication Plan must be agreed upon and given to the ER before construction commences. • The Communication Plan, once agreed upon by the Developer, shall be binding. • All communication with the I&APs must take place through the ECO. • A copy of the EMP must be available at the site office and should be accessible to all I&APs. • Key representatives from the abovementioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding project progress. • The Contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences. • A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. • All people on the I&APs list should be informed about the availability of the complaints register, in writing, by the ER prior to the commencement of construction activities.

SECTION H: SOCIO-ECONOMIC AND MISCELLANEOUS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Archaeology	<ul style="list-style-type: none"> • Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the project, a "chance find" procedure should be applied in the order they appear below: <ul style="list-style-type: none"> – If operating machinery or equipment stop work; – Demarcate the site with danger tape; – Determine GPS position if possible; – Report findings to foreman; – Report findings, site location and actions taken to superintendent; – Cease any works in immediate vicinity; – Visit site and determine whether work can proceed without damage to findings; – Determine and demarcate exclusion boundary; – Site location and details to be added to the project's Geographic Information System (GIS) for field confirmation by archaeologist; – Inspect site and confirm addition to project GIS; – Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and – Recovery, packaging and labelling of findings for transfer to National Museum. • Should human remains be found, the following actions will be required: <ul style="list-style-type: none"> – Apply the chance find procedure as described above; – Schedule a field inspection with an archaeologist to confirm that remains are human; – Advise and liaise with the NHC and Police; and – Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory.

3.5 OPERATION AND MAINTENANCE PHASE

The mitigation measures and monitoring actions contained within the tables below are relevant to the activities taking place during the operation and maintenance of the fuel depot. A hard copy of this information should be kept on-site and be available for review by the responsible people at all times and should be strictly adhered to.

3.5.1 GENERAL MITIGATION MEASURES

Table 4: Operation and maintenance phase mitigation measures

ASPECT	MITIGATION MEASURE
EMP implementation	If any construction is to be conducted as part of maintenance works for the services infrastructure within the project area please refer to the construction mitigation measures of this EMP (Chapter 3.4).
Provision of fuel	<ul style="list-style-type: none"> • Fuel for the depot should only be provided by a recognised and reputable bulk fuel supplier. Separate suppliers may be appointed for the two fuel types (i.e. petrol and diesel). • Fuel suppliers may only fill underground storage tanks by means of a gravity feed system (i.e. no pump feed system may be used). • Any fuel spills, which occur during a given tank fill operation due to negligence on the part of the fuel supplier should be remedied by the fuel supplier. Payment should be withheld until the fuel spill is cleaned up.
Training	<p>All personnel utilising the fuel depot should receive the appropriate training in accordance with their respective roles and responsibilities:</p> <ul style="list-style-type: none"> • Occupational health and safety training should include as a minimum the following: <ul style="list-style-type: none"> – Location and proper use of firefighting equipment; – Proper conduct when handling (dispensing and tank filling) hydrocarbons within the facility (no smoking, prohibited use of cell phones etc.); and – Emergency procedures (fire drills, spill control etc.).
Excavations	Ensure that accurate-as-build drawings are always available on-site.
Oil-water separator	No soap may be used to clean surfaces anywhere on the 9 m x 9m platform. Soap, which enters the oil-water separator will react with the fuel, putting it in suspension and causing fuel to pass through the separator.
Post-construction environmental training and awareness	All contractors appointed for maintenance work for this development must ensure that all personnel are aware of and receive training for the applicable health, safety and environmental provisions contained in this EMP.

3.5.2 MONITORING

Table 5: Operation and maintenance phase monitoring actions

ASPECT	MONITORING ACTION	RECURRANCE PERIOD
Oil-water separator	Inspect and clean oil-water separator.	Daily
	Inspect soakaway for signs of staining.	Daily
Underground storage tank	Check inspection holes around the tanks.	Daily
	Tank volume reconciliation.	Twice a day

3.6 DECOMMISSIONING AND REHABILITATION

The permanent closure of this development is not envisaged. However, in the event that this it is decommissioned the following mitigation measures should be adhered to.

Table 6: Decommissioning phase mitigation measures

ASPECT	MITIGATION MEASURE
Applicable standards	The decommissioning of the underground storage tanks, pumps/dispensers and pipework should be done in accordance with the SANS 10089-3:2010 (Edition 4)
Groundwater Contamination	Prevent spillage of hazardous substances (hydrocarbons, paint, etc.) and any other groundwater contaminants. Properly drain pipelines and tanks during decommissioning.
Construction related activities	Many of the mitigation measures prescribed for construction activity for this development (Chapter 3.4 above) would applicable to some of the decommissioning activities. These should be adhered to where applicable.
Rehabilitation	<p>In the event that decommissioning is deemed necessary, excavations need to be rehabilitated as follows:</p> <ul style="list-style-type: none"> • Excavations may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand with an oil spill) may be dumped as backfill; • Rehabilitated areas need to match the contours of the existing landscape; • Take note of drainage channels in the vicinity of decommissioned areas. These areas should not be higher (or lower) than these drainage channels. This ensures the efficiency of revegetation and reduces the chances erosion; • Available topsoil should as far as possible be spread evenly across areas to be rehabilitated; • Deep ripping of areas to be rehabilitated is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall; • Ripping should be done along slopes, not up and down a slope, which could lead to enhanced erosion; and • Rehabilitated areas need to remain fenced-off after the decommissioning of the project to prevent livestock from denuding newly established vegetation.