EXIGENT

NOVEMBER 2021

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

For the

Proposed development of the Accurate Trading 47 (Pty) Ltd. truck stop and filling station in Pienaarsrivier, Bela-Bela Local Municipality, Limpopo

A SYSTEMS APPROACH
APPLIED TO YOUR REQUIREMENTS

PROJECT INFORMATION

Applicant information	
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Project information	
Project title:	Proposed Accurate Trading 47 (Pty) Ltd. filling station and truck stop development on Erf 425 and Erf 426 in Pienaarsrivier, Bela Bela Municipality, Limpopo.
DEDTEA ref nr:	TBA
Local Municipality:	Bela-Bela Local Municipality
District Municipality	Waterberg District Municipality
Province:	Limpopo

Details of the Environmental Assessment Practitioner (EAP) who prepared the Environmental Management Programme (EMPRr)

NAME	HIGHEST QUALIFICATION	PROFESSIONAL AFFILIATIONS	EXPERIENCE IN ENVIRONMENTAL MANAGEMENT
Jacolette Adam	MSc LLM (Environmental Law)	• Certified with the South African Council for Natural Scientific Professions (400088/02) • Registered Environmental Assessment Practitioner of South Africa (EAPASA) (2019/1040)	21 years
Madeleine Knoetze	BSc	• International Association of Impact Assessment (South African Chapter)	7 years

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GLOSSARY

Alien vegetation	Means all undesirable vegetation, defined as but not limited to, all declared category 1 and category 2 plants in terms of the Conservation of Agricultural Resources Act (43 of 1983) (CARA) amended regulations 15 and 16 as promulgated in March 2001.
Client	Accurate Trading 47 (Pty) Ltd
Construction activity	Refers to any action taken by the Contractor, his subcontractors, suppliers or personnel in undertaking the construction work.
Contaminated water	Means water contaminated by the client's activities, e.g. polluted water from building rubble, waste spillage etc
Environment	The '*environment*' is defined in terms of the National Environmental Management Act (Act 107 of 1998) as the surroundings within which humans exist and that are made up of- *(i) the land, water and atmosphere of the earth;* *(ii) micro-organisms, plant and animal life;* *(iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and* *(iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing*
Environmental Impact	The change to the environment resulting from an environmental aspect (an activity) on the environment, whether desirable or undesirable. An impact may be the direct or indirect consequence of an activity**.**
Fence	A physical barrier in the form of posts and barbed wire or any other concrete construction ('palisade'- type fencing included) constructed with the purpose of keeping humans and animals within or out of defined boundaries.
General Waste	Domestic, commercial and non-hazardous waste.
Non-compliance	Failure to comply with the requirements of the EMP.
Pollution	Any change in the environment caused by substances, radioactive or otherwise, or noise, odours, dust or heat, emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.
Hazardous waste	Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.
Pollution Incident	Any incident that may cause or has caused damage to or the contamination of the natural environment

Potentially hazardous substance	Is a substance, which can have a deleterious effect on the environment. Hazardous chemical substances are defined in the Regulations for Hazardous Chemical Substances published in terms of the Occupational Health and Safety Act (Act No. 85 of 1993).
Solid waste	All solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).
Storm water	Rainfall run-off from the site.
Vegetation rehabilitation	Refers to the re-establishment of locally indigenous vegetation with a similar species composition to that which naturally occurs in the area.
Waste water	Water containing cement washings, oil, fuel or other contaminants.

ABBREVIATIONS AND ACRONYMS

CARA	Conservation of Agricultural Resources Act (Act 43 of 1983)
CMA	Catchment Management Agencies
DAFF	Department of Agriculture, Forestry and Fisheries
DEDET	Department of Economic Development, Tourism and Environmental Affairs
DWA	Department of Water Affairs
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECO	Environmental Control Officer
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
IWWMP	Integrated Water and Waste Management Plan
MSDS	Materials Safety Data Sheet
NEMA	National Environmental Management Act (Act 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act 10 of 2004)
NWA	National Water Act (Act 36 of 1998)
OHSA	Occupational Health and Safety Act
PPE	Personal Protective Equipment
TOPS	Threatened or Protected Species – NEMBA
uPVC	unplasticied Polyvinyl Chloride

1. PROJECT BACKGROUND

Accurate Trading 47 (Pty) Ltd is proposing the development of a service station and truck stop on Erf 425 & 426, Pienaarsrivier, Bela-Bela Local Municipality. The service station will be equipped with a canopied area that will provide coverage for the filling islands catering to light motor vehicles, a parking lot located directly in front of the service station building and future infrastructure. The filling island servicing the heavy motor vehicle will also be canopied and have a separate pay point. The convenience store will have a parking lot which will be large enough to accommodate thirty-three (33) parking bays, including two parking bays specifically allocated to handicapped individuals. The lined tank farm will be installed underground, and a concrete slab will be placed on top of the tanks.

The proposed development will also include the widening of D626 road and the construction of the access roads via Marcelle Street as well as Catanho Street.

Three external infrastructure connections (one for sewer, water and electricity, respectively) will be installed into the proposed development site.

2. PROJECT LOCALITY

The proposed development is located with the Bela-Bela Local Municipality within the Waterberg District Municipality, Limpopo Province. The site is located within the quaternary degree grid cell (QDGC) 2528AB (Figure 2-1), with the centre point geographic co-ordinates situated at:

Table 2-1. Centre point coordinates of the proposed development.

	Degree	Minutes	Seconds
Latitude	25	12	19.39
Longitude	28	17	58.01

The services station development will be located within the boundaries of Erf 425 and Erf 426 in Pienaarsrivier, Bela Bela Municipality, Limpopo.

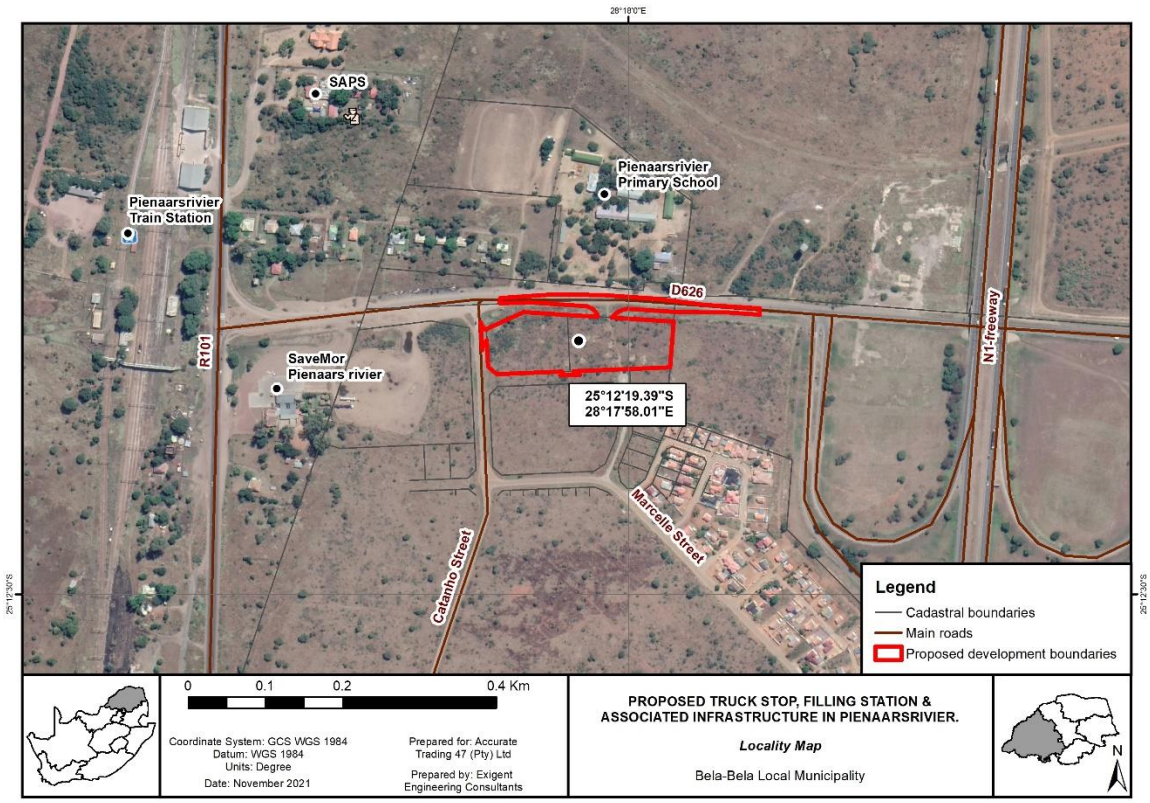

Figure 2-1. Locality of the proposed services station and associated infrastructure.

3. DESIGN INFORMATION

3.1. Infrastructure components

The proposed service station development will be comprised of the following infrastructural components:

- 5 Light Motor Vehicle (LMV) filling islands will be constructed underneath a canopy with the possibility of constructing a 6th and 7th filling island in the future;
- 2 Heavy Motor Vehicles (HMV)
- 4 x 46 Kℓ Underground fuel tanks (two diesel and 2 petrol tanks);
- A total of thirty-three (33) Parking bays [including two (2) handicapped parking bays for] for LMV;
- 9 HMV parking bays;
- 1 Loading bay;
- A standby generator;

- A service station building that will be approximately 1024 m^2 in size;
- All major infrastructural features (Thus, all infrastructure apart from a number of parking bays and access areas into the property) will be constructed at least 30 m away from the existing road edge (Else 15 m from the Department of Transport's side of the site boundary).

3.1.1. Underground fuel tanks

These underground fuel tanks will be located in a tank farm, for which the following specifications have been proposed:

- The tank farm will have a maximum depth of 5 m
- The combined volume of the three double-walled underground fuel tanks will be 184 m3.
- Along the perimeter of the tank farm, there will be 10 monitoring wells constructed of 160 mm diameter PVC pipes;
- The tank farm will be lined with 550-micron PVC lining, encasing river sand backfilling around the tanks; and
- The tanks will be positioned 0.5 m apart with a manhole located above each tank.

3.1.2. Road widening

The proposed development will also include the widening of D626 road and the construction of the access roads via Marcelle Street as well as Catanho Street. The widening of D626 will see to the widening of a 306 m section of the road. The road will be widened by 8 m within the existing road servitude.

- The access road leading into Erf 426 will have the following specifications. The portion of the D626 to be affected by the proposed development will be upgraded to include the following:
    - East bound access into the site:
        - A right turning lane will be provided as access (by means of a Yield-road command), the lane will be widened in order to accommodate the right turning lane into the property.
    - Exit from proposed services station into the D626:
        - Will be governed by a T-junction intersection pioneered by a multi-directional 'Stop' command sign (thus, allowing drivers to either turn left or right by using the T-junction intersection exclusively)
    - West-bound access into the site:
        - An off-ramp will be provided into the proposed development site, which will be adequately equipped to accommodate HMV up to 17 m in length.

3.1.3. External services infrastructure

Three external infrastructure connections (one for sewer, water and electricity, respectively) will be installed into the proposed development site.

3.1.4. Construction sequence

The construction sequence for the proposed development will follow the following procedure:

1) Earthworks of the proposed filling station development site will entail the preparation of the site in order to ensure optimum founding conditions for the future infrastructure. The earthworks will follow the following procedure:
    - Clearance of vegetation;
    - Stripping and stockpiling of the topsoil for re-use;
    - Excavation of unsuitable soil;
    - Installation of services;
    - Backfilling of the site where required;
    - Concluding the earthworks, compactors and roller machines will be used to compact the layer works and fill material.
2) Installation procedures of the underground tank farm will follow the following general installation procedures are as follow:
    - Excavation of the underground tank farm location must be done and must be level to be effective;
    - The excavation area is then sealed off in order to reduce seepage;
    - Should water be trapped within the sealed of area (due to rain water containment), the water will then be pumped out of the sealed area;
    - A retaining wall will be constructed around the edge of the property;
    - This is followed by the insertion of a hardening material in order to provide a water impervious hardened base in the form of an underground base floor slab;
    - The tanks are then installed on-top of the slab, within the retaining wall;
    - Backfilling then takes place;
    - 10 monitoring wells will be installed in strategic locations around the underground tanks in order to identify potential impacts and prevent the contamination of surrounding areas; and
    - The underground tank farm is then covered by the further forecourt construction works.
3) Construction of the external services will entail the sewer, water and electricity connections. The construction of the sewer connection will follow the following construction procedures:
    - Cleaning of vegetation, approximately 3m width along the route of each services;
    - Stripping and stockpiling of the topsoil for later use;
    - Trench excavation along the route of each service. Approximately 1m deep by 750mm wide trenches for the water and electricity services. The sewer trenches will be also by 750mm wide with varying depth as per the design. If the material is firm, normal excavation techniques will be applied. In soft

material, shoring of the trench sides may be required. In hard rock material trench excavation may require the use of pneumatic breakers or blasting.

- Temporary dewatering pumps wall be installed to keep the excavation dry where necessary;
- Construct stormwater management structures where required;
- Preparation of bedding for each services;
- Installation of the respective services as per the relevant engineering standards;
- Testing of the respective services;
- Backfilling of the trenches to specification;
- Dress backfill, topsoil and re-vegetate all exposed areas.

4) Stormwater drainage structures will be installed as per the following installation procedures:
   - Cleaning of vegetation, approximately 3m width along the route of each services;
   - Stripping and stockpiling of the topsoil for re-use;
   - Trench excavation along the route of stormwater drainage system. Trenches will be approximately 1.2m wide and will vary in depth as per the design;
   - Temporary protection of the works by means of temporary soil berms and channels;
   - Preparation of bedding for pipes;
   - Installation of the concrete stormwater pipes relevant engineering standards;
   - Provision of a selected fill blanket 300mm above stormwater pipes;
   - Backfilling of the trenches in layers not more than 300mm and compacted to a density of 90% mod. ASSHTO;
   - Construction of the manholes, inlet and outlet structure. Ensure that the grease and oil traps are constructed at the inlet structures as per the engineer's design. Ensure that the silt trap is constructed at the outlet structure as per the engineer's design.
   - Construction of the earth stabilising system, by means of Reno mattresses and gabions, downstream of outlet structure;
   - Removal of temporary soil berms and channels used for diversion of stormwater during the construction phase;
   - Reinstatement of the 100mm layer topsoil along areas of work; and
   - Reinstatement of vegetation should it be required.
5) Infrastructure construction which will include the construction of the forecourt (including the filling islands, the canopy), the parking area, the truck stop, and the filling island building. Standard building procedures and connections will be adhered to during the construction of the infrastructure.

- The hardened surface of the forecourt will be designed to ensure that surface water runoff and potential spillages from this area and the fuel filling point will be directed through a sand/oil/grease separator which is to be installed on-site. The oil/sludge collected from the separator will regularly be disposed of by an approved service provider.
- All surface areas on the forecourt filling area and tanker refuelling area to be of concrete to form an impervious surface.
- The final filler and forecourt drainage / containment system will be designed in conjunction with the fuel company which will operate the facility to ensure compliance with their risk assessments and specific specifications.

6) Upgrade of the road D626 and the construction of the access roads in the proposed development site:
   - Vegetation clearance,
   - Cut to fill;
   - Stripping and stockpiling of the topsoil for re-use;
   - Excavation of unsuitable soil
   - Import fill material from licenced commercial sources;
   - The in-situ material will be ripped, stabilised and compacted to 98% Mod AASHTO density;
   - Import of materials to conclude the layer works for the road.
   - Provide a continuously graded asphalt surfacing compacted to 96% Marshall density;
   - Apply associated road markings, kerbing, kerb and channelling, stormwater pipes and channels where required.

3.1.5. Additional activities (during construction phase)

- **Haulage and Access Roads**

  Access into the proposed development site will be acquired from the road D626, Catanho Street, and the future Marcelle Street. No additional access roads will be required during the construction phase of the proposed upgrade.

- **Plant/Machinery**

  The machinery that will be required during the construction phase of the proposed development will include rollers, a Backhoe Loader, an excavator, a front-end loader, a grader, a bulldozer, tip trucks and a water tanker.

- **Materials, fuels and batching plants**

  Materials required for the construction of the proposed services station and associated for road building and storm water system installation are concrete, steel, various sizes (diameter) of uPVC pipes, road lime, bitumen, petroprime, crushed stone, gravel and asphalt. Non-cohesive river sand, dump rock and granualar material.

- **Contractor's Site Office & Stockpile Areas**

  Contractor's site office and stockpile areas will be located either within the road reserve or on nearby properties. The exact sites will be identified by the contractor, and the siting and establishment thereof will be guided by specifications brought forth by the Environmental Management Programme (EMPr). No staff (except security) will be accommodated overnight at site offices/ stockpile sites.

- **Sanitation**

  Rented portable chemical toilets will be used for workers at the site of works, to be serviced by the contractor's service provider regularly. Males and females on site are to be provided separate portable toilets. The potable ablution facilities will be provided as set out in the Occupational Health & Safety Act no. 85 of 1993 (OHSA, 1993)

- **Water Uses**

  During the construction phase of the proposed development, municipal supplied water will be used for all on site processes, including, if needed, to implement dust suppression methods (this will be required especially in the windy months – typically August and September).

4. ENVIRONMENTAL LEGISLATION

All legislation applicable to the development must be strictly enforced. The Applicant and all contractors must be acquainted with the relevant environmental legislation, including provincial and local government regulations, which are in place to ensure the protection of the environment.

This EMPr has been compiled in accordance with the provisions of the Constitution of South Africa and the principles of Integrated Environmental Management. It is the responsibility of the Applicant to ensure that all operations related to the proposed filling station and related infrastructure services are in line with environmental legislation during construction and operation.

5. PURPOSE OF THE EMPR

The EMPr is a management tool that outlines environmental management strategies to ensure the Project's environmental commitments and objectives are met. The EMPr will be used during the proposed construction period for the services.

The EMPr outlines:

- Key environmental issues associated with construction and operation of the development;
- Management measures to minimise construction and operational impacts;
- Monitoring to be undertaken during construction and the operational phase;
- Environmental accountabilities; and
- Legislative requirements which must be met by the Company.

The applicant must take into consideration that this EMPr will be amended during the environmental authorisation proses and must be amended as required over the duration of the construction or in line with changes in legislation. All operational license requirements must be added to this EMP in terms of monitoring requirements.

The objective of this EMPr is to measure, record and demonstrate ongoing compliance with relevant legislation through implementation of the specified mitigation measures.

6. SCOPE OF THE EMPR

The EMPr provides environmental management that aims to mitigate the impact of the construction phase on the biophysical environment, whilst taking into consideration the potential social and economic impacts of the proposed upgrade. The main components of the management are the following:

- Dust management during construction;
- Erosion and sedimentation;
- Hazardous and non-hazardous waste management on site;
- Stormwater control and management;
- Ambient noise levels;
- Litter and waste pollution;
- Site operations and facilities;
- Watercourse protection;
- Environmental sensitive zones and protection thereof;
- Sourcing, excavating and dumping of soil material;
- Noise and vibration control;
- Sewer spillages mitigation; and
- Environmental awareness training.

7. AIMS OF THIS DOCUMENT

The purpose of this EMPr is to ensure that the impacts of all the phases of the project on the environment are kept to a minimum, to ensure continued monitoring of the construction phase and to ensure the involvement of interested and affected parties (I&APs) in a meaningful way.

8. ENVIRONMENTAL AWARENESS TRAINING

The Contractor must ensure that adequate environmental awareness training of senior site personnel takes place and that all construction workers receive an induction presentation on the importance and implications of the EMPr.

The presentation must be conducted, as far as possible, in the employees' language of choice.

As a minimum, training must include:

- Explanation of the importance of complying with the EMPr.
- Identification of sensitive environmental systems.
- 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 carrying out their duties.
- Explanation of the specifics of this EMPr.
- Explanation of the management structure of individuals responsible for matters pertaining to the EMPr.

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

9. ENVIRONMENTAL ACCOUNTABILITIES

10.1. Responsibility matrix and reporting structure

During operation, all instructions and official communications regarding environmental matters must follow the organisational structure shown in Figure 9-1. The organisational structure identifies and defines the authorities' structure, and the communication structure for the various parties involved in the construction and operation of the proposed filling station.

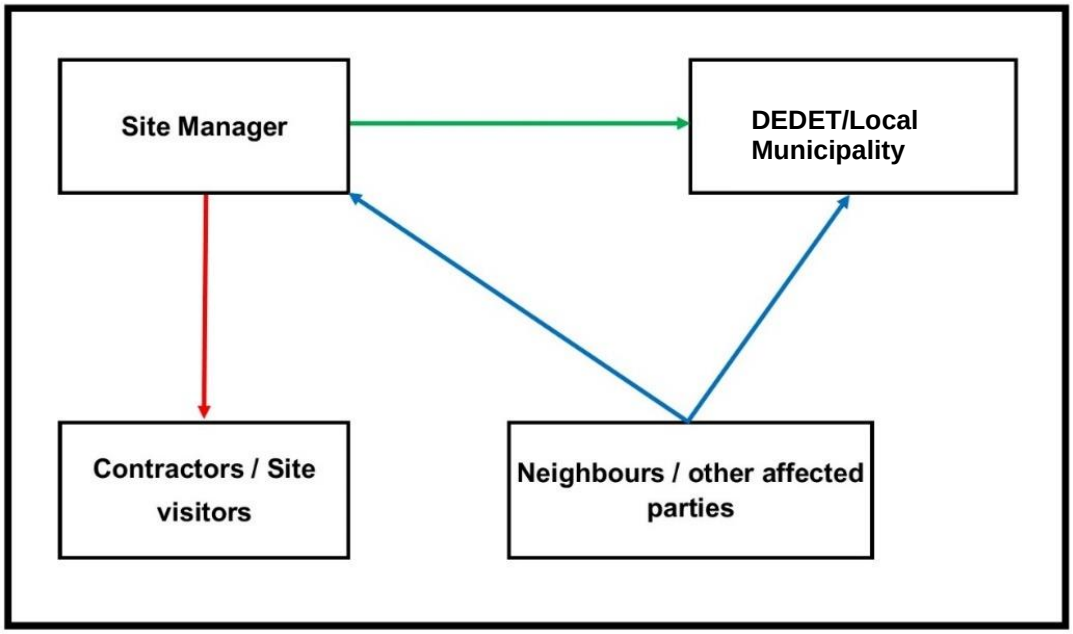

Figure 9-1. Organisational/reporting structure for implementation of the EMPr

10. ENVIRONMENTAL ROLES

Environmental accountabilities for this construction EMP are as follows:

Table 10-1: Environmental Accountabilities

ROLE	ACCOUNTABILITY
Applicant / Municipality	• Ensure that the conditions within the EMPr are met. • Implementation of the EMPr. • Submission of any substantial changes, updates or amendments to the EMPr to DEDET for approval. • Ensuring that the provisions of the EMPr are binding on all Contractors operating on the site during the life of the project. • Including a performance-based requirement in all Contract Documents. • Ensuring that environmental site inspections and monthly audit reports are compiled during construction to establish how well the Contractor is complying with the EMPr. The monthly environmental audit reports must be submitted to DEDET. • Ensuring that compliance/non-compliance records are kept in good order and made available on request by the authorities. • Complying with all applicable environmental legislation, regulations and guidelines, and ensuring that Contractors undertake responsibility to do the same. • Being committed to the principles contained within NEMA, including the prevention of pollution and sustainable development.

ROLE	ACCOUNTABILITY
Project Engineer and Resident Engineer	• Ensuring that the provisions of the EMPr are binding on all Contractors operating on the site during the construction of the project and that a performance-based requirement is included in all contracts. • Including the approved EMPr as part of the contract documents. • Ensuring that the Contractor(s) and Sub-contractor(s) are conversant with the requirements of the EMPr and that all members of staff on site have attended an environmental awareness-training course presented by the ECO. • Compiling preliminary construction site layout plans prior to construction commencing. • Approving final construction site layout plans in conjunction with the Environmental Manager. • Ensuring that the Contractor(s) complies with the EMPr and, if not, ensure that the Contractor(s) bears the costs of damages/compensation resulting from non-compliance with the EMPr. • If necessary, on the recommendation of the Environmental Manager or Environmental Compliance Officer (ECO), instructing the Contractor(s) to suspend any or all works on site, if the Contractor(s) or his/her Sub-contractors/suppliers fail to comply with the EMPr. • Ensuring that the Contractor(s) conducts all activities in a manner that minimises disturbance to the project area, local communities and road users and that complaints and queries by members of the public at the site office, are forwarded to the RE. • Liaison with stakeholders including landowners and land users, utility providers[1], neighbours, and relevant authorities. This must be done in association with the Contractor (and the ECO where necessary). • Ensuring that a register of complaints and queries by members of the public is maintained at the site office and the actions taken in response to these complaints are recorded. • Liaising directly with the Environmental Manager in terms of environmental issues and maintaining close channels of communication with the Environmental Manager regarding foreseeable activities that may require environmental input. • On behalf of the Employer, reviewing any substantial changes, updates or amendments to the EMPr prior to its submission to the office of DEDET for approval. • On behalf of the Employer, ensuring that the Environmental Manager keeps the compliance/non-compliance records in good order and makes them available on request to the authorities. • Ensuring that all EMPr-related instructions from the RE to the Contractor are recorded in the site diary. • Having available on request a copy of the EMPr at the construction site at all times and ensuring that all staff, Contractors and Sub-contractors are familiar with or made aware of the contents of the EMPr. • Complying with all applicable environmental legislation, regulations and guidelines, and ensuring that Contractors undertake responsibility to do the same. • Ensuring that an environmental close out report is obtained from the Environmental Manager prior to awarding the Certificate of Completion to the Contractor(s).
Site Manager	• Be familiar with the recommendations and mitigation measures of this EMPr and implement these measures. • Ensure that all employees and contractors adhere to the EMPr. • Advise on environmental management issues.

[1] The Project Engineer is to ensure liaison with utility operators regarding safety requirements for work within utility servitudes or crossing utilities.

ROLE	ACCOUNTABILITY

	• Monitor site activities on a daily basis for compliance.
	• Rectify transgressions through the implementation of corrective action.
	• Ensure that environmental inspections/audits are conducted as per the requirements of the EA.
	• Inform and educate all employees about the environmental risks associated with the various activities undertaken and highlight those activities which must be avoided in order to minimise significant impacts to the environment.
	• Maintain an environmental register which keeps a record of all incidents which occur on the site. These incidents include:
	  • Public involvement/complaints.
	  • Health and safety incidents.
	  • Hazardous materials stored on site.
	  • Non-compliance incidents.

Contractor/ Site visitors	• Ensure implementation of the EMPr. • Inform and educate all employees/contractors/site visitors about the environmental risks associated with the various activities undertaken at the site and highlight those activities which must be avoided in order to minimise significant impacts to the environment. • Should employees/contractors/site visitors require clarity on any aspect of the EMPr, they must contact the Site Manager for advice.
Environmental Control Officer (ECO)	• Demarcate all sensitive areas which will be impacted upon by the development footprint. • Demarcate the pipeline infrastructure along the environmentally approved layout to limit deviation of the infrastructure. • Conduct a monthly site visit to monitor the construction activities in terms of the approved EMP and ensure authorisation conditions are adhered to. • Compile a monthly audit report in which all finding will be recorded, non-compliance highlighted, mitigation measures suggested, and recommendations included. • The monthly audit report must be submitted to DEDET.
Authorities / DEDET	• Review reports submitted as and when required. • Conduct site visit and/or investigation after incident.
Neighbours/I&APS	• Report incidents. • Report nuisance activities during construction phase.

11. PROPOSED CONSTRUCTION TIMEFRAMES

The preliminary proposed construction timeframes are indicated in Table 11-1.

Table 11-1. Proposed timeframe of activities during construction phase.

ACTIVITY	PROPOSED TIMEFRAME	LOCATION	SPECIFIC ACTIVITIES
Site preparation	To be confirmed	On-site	To be confirmed

Construction of the services station, access road and external services	To be confirmed	On-site	To be confirmed
Final construction activities and rehabilitation	To be confirmed	On-site	To be confirmed

12. REPORTING

A filing system must be established and must be maintained throughout the lifespan of the activities. The Site Manager is solely responsible for the upkeep and management of the EMPr file. A hardcopy of all documentation must be filed, while electronic copies must be maintained in a dedicated electronic folder with regular back-ups being made. The maintenance and filling of, electronic and hard copies must be the responsibility of the Site Manager and must remain current and up-to-date. The filing system must be updated, and relevant documents added as required. The EMPr file must be made available at all times on request by DEDET, DWS or other relevant authorities.

A monitoring programme must be implemented for the duration of the construction and operational phase.

This programme must include:

- Daily incident logs are to be compiled by the Site Manager.
- All significant incidents must be reported to the District Municipality within 24 hours of occurrence and kept in the EMPr file controlled by the Site Manager. The daily incident logs must contain the following:
    - The date and time of the incident.
    - Description of the incident.
    - The name of the person responsible.
    - The incident must be listed as significant or minor.
    - Remedial or corrective action taken to mitigate the incident.
    - Record of repeat minor offences by the same employee/contractor.
- The Site Manager must keep a photographic record of any damage to areas outside the demarcated site area. The date, time of damage, type of damage and reasons for the damage must be recorded in full to ensure the responsible party is held liable. All claims for compensation emanating from damage must be directed to the Site Manager for appraisal.

The Site Manager must be held liable for all unnecessary damage to the environment. A register must be kept of all complaints from the surrounding community/businesses. All complaints/claims must be handled immediately to ensure timeous rectification by the responsible party.

The Site Manager must cover relevant details with regard to:

- Construction procedures and location of the construction site.

- Start date and duration of the procedure.
- Materials, equipment and labour to be used.
- How materials, equipment and labour would be moved to and from the site as well as on site during construction.
- Storage, removal and subsequent handling of all materials, excess materials and waste materials of the procedure.
- Emergency procedures in case of any reasonably potential accident/incident which would occur during the procedure.
- Compliance/non-compliance with the EMPr specification and motivation if non-compliant.

13. ENVIRONMENTAL MANAGEMENT PROGRAMME

Table 13-1. Environmental aspects and related actions for the proposed services station and associated infrastructure upgrade.

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
Pre-Construction Phase							
SITE LAYOUT	Safe working environment Ensure safe working and healthy environment and prevention of injuries of workers on site.	The plan must show the positions and extent of the known permanent and temporary site structures and infrastructure as listed below o Site access (including entry and exit points). o Roads and haul/access routes. o Buildings and structures. o Contractor camp(s). o Material storage yards. o Site office. o Security requirements (including temporary and permanent fencing, and lighting) and accommodation areas for security staff. o Gates and fences. o Concrete batching areas. o Essential services (permanent and temporary water, electricity and sewage). o Sanitation (including the treatment/removal of sewage). o Construction materials storage areas including the storage of fuels.	Prior to construction	Ensuring all construction camp activities are outside of sensitive areas.	Submit site layout plan to the project engineer and the ECO	Once-off	Contractor Project Engineer ECO

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		○ Vehicle and equipment storage areas. ○ Wash bays. ○ Storm water control measures. ○ Borrow areas (if required). ○ Excavations and trenches. ○ Stockpile/laydown areas. ○ Spoil areas. ○ Waste management including waste storage and disposal sites. ○ Areas where vegetation will need to be cleared. ○ Features and plants to be conserved.					
Construction Phase							
Ecosystem and habitats	<u>Clearance of vegetation</u> Ensure sensitive ecosystems and habitats are protected during construction	• Clearance of indigenous vegetation must be kept to a minimum.	Construction	Limiting construction footprint. The preservation of the vegetation site.	Site to be inspected.	Once-off prior to clearance of a construction area	ECO
		• Where clearing is required outside of earthwork/construction areas, vegetation must be brush-cut rather than cleared to speed re-establishment following site closure;	Construction	The preservation of the vegetation site.	Site to be inspected.	Once-off prior to clearance of a construction area	ECO
		• Progress of vegetation establishment must be monitored regularly by ECO, with slow recovery requiring intervention to ensure site recovery and integrity, as well as physical stability.	Construction	The preservation of the vegetation site.	Site to be inspected.	Continuous	ECO

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		• No indigenous vegetation is to be collected or utilized for firewood.	Construction	The preservation of the vegetation site.	Site to be inspected	Continuous	Contractor
		• In the event where plants of high conservation value are found on site, a plant 'rescue' operation must be undertaken under the supervision of an ecologist/botanist prior to construction, where plants of high conservation value will be impacted by any part of the development (construction or operation phase).	Construction	The preservation of the vegetation site. Preserve protected species on site	Site to be inspected	Once-off	ECO Contractor
		• Vegetation clearing must take place in a phased manner in order to retain vegetation cover for as long as possible.	Construction	The preservation of the vegetation site.	Site to be inspected.	Continuous	Contractor
		• All indigenous plant material removed from the cleared areas must be stockpiled for mulching. All remaining vegetation must be removed and disposed of at a registered landfill site.	Construction	The preservation of the vegetation site.	Site to be inspected.	Continuous	Contractor
Ecosystem and habitats	<u>Protection of faunal species</u> Ensure that limited impacts are exercised on faunal communities	• Intentional killing of any faunal species (including snakes) should be avoided by means of awareness programs and toolbox talks presented to construction labourers. Any person found deliberately harassing any animal in any way must face disciplinary measures.	Construction	The preservation of the faunal communities.	Site to be inspected.	Continuous	Contractor
		• If any faunal species is recovered during the construction phase, this species must be relocated to the nearest natural open space with	Construction	The preservation of the faunal communities.	Site to be inspected.	Continuous	Contractor ECO

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		suitable habitat for the particular species to survive.					
		• All construction activities must be limited to daylight hours.	Construction	The preservation of the faunal communities.	Site to be inspected.	Continuous	Contractor
Ecosystem and habitats	Control of alien and invasive plant species Ensure sensitive ecosystems and habitats are protected during construction	• All alien invasive plants must be removed. The ECO must do regular follow-ups to ensure no alien invasive plants are located within the development footprint.	Construction	Improvement of the quality of the natural resources	Site to be inspected.	Continuous	Contractor ECO
		• Bare surfaces must be grassed as soon as possible after construction to minimise time of exposure. Locally occurring, indigenous grasses must be used. Alien invasive grasses such as *Pennisetum clandestinum* (Kikuyu) are not to be used.	Construction	Improvement of the quality of the natural resources	Site to be inspected.	Continuous	Contractor ECO
		• All IAP control work should only be undertaken by a competent contractor • Registered herbicides must strictly be applied to alien invasive vegetation only.	Construction	Improvement of the quality of the natural resources	Site to be inspected.	Continuous	Contractor ECO
Ecosystem and habitats	Erosion control	• The stormwater canal should be avoided during construction activities	Construction	Improvement of the quality of the natural resources	Site to be inspected.	Continuous	Contractor ECO
		• Checks must be carried out at regular intervals to identify areas where erosion is occurring, and remedial action must be taken, especially during or after heavy rainfall events.	Construction	Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
HEALTH AND SAFETY	General management measures	• Respect workers right to refuse to work in unsafe and unhealthy environment.	Construction	No complaints from workers	Site to be inspected.	Continuous	Contractor
		• All work must be carried out under strict supervision and according to best practice.	Construction	No complaints from workers	Site to be inspected.	Continuous	Contractor
		• Management must identify training requirements for the various work areas and undertake training of employees and contract workers in the respective areas.	Construction	No complaints from workers	Site to be inspected.	Continuous	Contractor
		• Local labour must be used to ensure the affected community get the most benefit from the job opportunities where possible.	Construction	No complaints from workers	Site to be inspected.	Continuous	Contractor
		• Training must be provided to local labourers in order to perform more specialised jobs.	Construction	No complaints from workers	Site to be inspected.	Continuous	Contractor
SITE SUPPORT FACILITIES	Ablution facilities	• Workers must be provided with suitable ablution facilities which are serviced on a regular basis.	Construction	No complaints from workers	Site to be inspected.	Continuous	Contractor
		• Separate toilet facilities must be provided for males and females on site.	Construction	No complaints from workers	Site to be inspected.	Continuous	Contractor
HEALTH AND SAFETY	Fire prevention and control	• Fire prevention talks must be held and that all workers on site know the proper procedure in the incidence of a fire on site.	Construction	Induction and task	Site to be inspected.	Continuous	Contractor
		• Ensure adequate firefighting equipment on site.	Construction	Induction and task	Site to be inspected.	Continuous	Contractor

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
SITE SUPPORT FACILITIES	Operation of the construction site To ensure that the site cause least disturbance to environment and any I&APs	• Lighting and noise disturbance or any other form of disturbance on the person living lawfully in the vicinity must be kept to a minimum.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor
	Stockpiling	• Stockpiling must remain within the construction boundaries.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor
		• Stripped topsoil must be stockpiled in areas agreed with by the Site Manager for later use in re-vegetation and must be adequately protected. Topsoil is considered to be the natural soil covering, including all the vegetation and organic matter. The depth of the soil may vary and due to this reason the top 300mm of soil must be removed and preserved as topsoil.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor
		• Topsoil stockpiles must be convex and no more than 2 m high. Stockpiles must be shaped so that no surface water ponding can take place.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		• Topsoil stockpiles must be monitored regularly to identify any alien plants. If any occurs, they must be removed before they germinate to prevent contamination of the indigenous seed bank.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor
	Stormwater management	• The stormwater management plan must be followed.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor Engineer
	Vehicles Limit pollution due to vehicles	• All mechanical equipment must be in good working order and adhere to relevant noise requirements of the Road Traffic Act.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
		• Safety measures that generate noise, including reverse gear alarms, must be adjusted to minimise noise.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
		• The vehicles must be in good working order and all leaks such as oil leaks must be repaired immediately.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor
		• The speed of vehicles must be strictly controlled to avoid dangerous situations to the local community, and excessive dust and deterioration of the roads within the construction areas.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor
		• Records must be kept of accidents.	Construction	No incidents/complaints from I&APs Limited erosion Limited dust	Site to be inspected.	Continuous	Contractor

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
SITE SUPPORT FACILITIES	Sewage spillages To prevent or minimize the incidents and impact of potential sewage spillages	• Records of all sewage spillages must be kept. • In the event of a sewage spillage occurrence, it must immediately be reported to the relevant departments.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
		• Where contamination of the soil occurs, soil must be immediately removed to prevent further contamination.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
		• An emergency preparedness plan must be in place for instances where spills occur that can be harmful to people or the receiving environment.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor ECO
SITE SUPPORT FACILITIES	Waste – Hazardous substances To ensure no waste poses health threats or causes pollution	• MSDS's must be available on site for all chemicals and hazardous substances to be used on site, including information on their ecological impacts and how to minimise the impacts in case of leakage.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
		• All spills must be immediately cleaned up and treated accordingly and reported to the ECO and the relevant authority. • A hazardous spill protocol must be implemented, and the affected area cleaned up immediately.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
		• Hazardous waste (oils, effluent from corrosion protection activities) must be disposed of at registered landfill site.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		• The use of all chemicals and potentially hazardous substances must take place on a tray or an impermeable surface.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
		• Preventive measures must be undertaken during the construction of the infrastructures, securing all joints for minimum spillage occurrences.	Construction	No incidents/complaints from I&APs No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• A spill kit must be available in the event of a hydrocarbon or chemical spill.	Construction	No incidents/complaints from I&APs No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• Report all spills in the onsite environmental incident book, including: the date, time and location, quantity and type of material spilled, circumstances that caused the spill, damage caused, description of the clean-up.	Construction	No incidents/complaints from I&APs No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• All significant spills must be reported to the DEDET (Waste Management) and other relevant authorities be informed of the incident within 48 hours. • If remedial action is required, this must be taken in consultation with the DEDET.	Construction	No incidents/complaints from I&APs No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
WASTE MANAGEMENT	Waste – General waste	• Construction waste must be taken to the closest general waste landfill site.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor ECO

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		• All rubble, litter and any other type of waste must be removed from the development footprint and areas directly adjacent to the construction areas.	Construction	No incidents/complaints from I&APs	Site to be inspected.	Continuous	Contractor
	Waste – Groundwater contamination	• If construction machinery or equipment is used during the upgrades, they are not to be re-fuelled or washed on site	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• Drip trays must be used to collect used oil, lubricants, etc. during maintenance. Drip trays must be provided for all stationary plant.	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
SITE SUPPORT FACILITIES	Cement and concrete batching	• Concrete mixing directly on the ground must not be allowed and must take place on impermeable surfaces in dedicated areas to the satisfaction of the Site Manager.	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• The concrete batching activities must be located in an area of low environmental sensitivity to be identified by the Site Manager.	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• All runoff from batching areas must be strictly controlled and cement-contaminated water must be collected, stored and disposed of at a registered landfill site authorised to deal with these substances.	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• Contaminated water storage facilities must not be allowed to overflow and appropriate protection from rain and flooding must be implemented. The	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		storage facilities must be completely closed systems such as JoJo tanks, with adequate capacities.					
		• Unused cement bags must be stored out of the rain where runoff won't affect them. Used / empty cement bags must be collected and stored in weatherproof containers to prevent wind-blown cement dust and water contamination.	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• Used cement bags must not be used for any other purpose and must be disposed of on a regular basis at a registered landfill site.	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
		• All excess concrete must be removed from site on completion of concrete works and disposed of at a registered landfill site. Washing of the excess concrete into the ground must not be allowed.	Construction	No spillages /incidents or complaint	Site to be inspected.	Continuous	Contractor
Post-construction and rehabilitation							
FINISHING OF SITE AFTER CONSTRUCTION	Restoration of the surrounding land	• All temporary facilities and waste materials must be removed.	Post construction/ Rehabilitation Phase	Clean site policy	Site to be inspected.	Continuous	Contractor
		• Rehabilitation of the natural vegetation of the excavated areas must be done immediately after the upgrade of the infrastructure at any point in order to prevent dust generated by the excavation activities from dispersing. The	Post construction/ Rehabilitation Phase	Limited erosion Successful rehabilitation of areas disturbed during construction	Site to be inspected.	Continuous	Contractor ECO

ASPECTS	OBJECTIVES	MITIGATION MEASURES	ACTION FREQUENCY	TARGET/ STANDARD	INDICATOR	Frequency	RESPONSIBILITY
		rehabilitation and construction must run simultaneously.					
		• For landscaping, soils must be reinstated in reverse order to ensure correct drainage and rehabilitation, if there is not enough topsoil present at the site it must be imported.	Post construction/ Rehabilitation Phase	Limited erosion Successful rehabilitation of areas disturbed during construction	Site to be inspected.	Continuous	Contractor ECO
		• All temporary stockpile areas, litter and dumped material and rubble must be removed on completion of construction.	Post construction/ Rehabilitation Phase	Limited erosion Successful rehabilitation of areas disturbed during construction	Site to be inspected.	Continuous	Contractor ECO