ENVIRONMENTAL CONSULTING

Telkom Park SA SOC (Ltd)

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE OPERATION & DECOMMISSIONING OF BULK FUEL STORAGE AT TELKOM PARK, 61 OAK AVENUE, HIGHVELD, CENTURION

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SEC REFERENCE NUMBER: 024053

PO Box 30134, Tokai, 7945
Telephone: 021 712 5060, Fax: 021 712 5061
Email: administration@environmentalconsultants.co.za

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1. DETAIL AND EXPERIENCE OF THE EAP WHO PREPARED THE EMPR

Sillito Environmental Consulting (Pty) Ltd ("SEC") has been appointed as the independent Environmental Assessment Practitioner ("EAP") to submit an Integrated Section 24G Application to the National Department of Forestry, Fisheries and the Environment ("DFFE") on behalf of the applicant, Telkom SA SOC (Ltd). This report was prepared by Jonathan Lassen of SEC and reviewed by Chantel Muller.

Jonathan Lassen holds an Advance Diploma in Marine Sciences and has experience as an Environmental Assessment Practitioner ("EAP") in environmental impact assessment, environmental compliance monitoring, Section 24G rectification processes, environmental management programmes and environmental authorisation processes in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998). Jonathan is currently a Candidate Environmental Assessment Practitioner with the Environmental Assessment Practitioners Association of South Africa ("EAPASA") and a member of the International Association for Impact Assessment ("IAIA").

Chantel Muller holds an MPhil in Environmental Management from Stellenbosch University and has eight years' experience in environmental management and environmental impact assessment. She is also a member of the International Association for Impact Assessment ("IAIA") and an Accredited Professional with the Green Building Council of South Africa.

2. INTRODUCTION

2.1. PROJECT DESCRIPTION

Telkom Park is situated on 61 Oak Ave, Highveld, Centurion and consists of the Core, Nexus and Hub areas.

EXISTING

As part of the emergency and uninterrupted power supply on site, Telkom has an existing fuel storage system. This existing fuel storage was installed without prior environmental authorisation in 1999 (Nexus and Core areas) and 2003 (Hub area), respectively. The fuel storage system at Telkom Park for the emergency and uninterrupted power supply consists of decentralized below-ground tanks connected to various day tanks and includes the tanks pumps, pump controllers, filtering, and distribution manifolds.

DECOMMISSIONING

The existing underground fuel storage infrastructure will remain operational pending the lawful decommissioning and removal of the underground fuel storage infrastructure. Once an alternative lawful fuel supply solution has been implemented in terms of the relevant environmental authorisation processes, the existing underground fuel storage infrastructure will be decommissioned and removed.

LEGISLATIVE REQUIREMENTS

The installation of these tanks during 1999 and 2003 triggered Schedule 1 (c) of ECA, Act

No 73 of 1989, and given that an environmental authorisation was not obtained prior to this installation, a Section 24G Application is required.

2 EXISTING FUEL STORAGE

The bulk fuel storage for the campus consists of a decentralized system that can be summarized as follow:

Generator	Power Demand		Fuel Demand		Day Tanks		Bulk Storage			Total
Description	kVA	Load	(L/hr.)	(L/hr.)	(L)	(L)	QTY	(L)	(L)	(L)
CORE 1	1500	50%	185	619	300	1200	2	23000	46000	47200
CORE 2	1500	50%	185		300					
BACKUP	2000	0%			300					
NEXUS C	1250	66%	249		300					
NEXUS A	1250	66%	249	868	300	1200	2	1400	48800	50000
NEXUS B	1250	66%	249		300					
NEXUS 1	1500	50%	185		300		2	23000		
NEXUS 2	1500	50%	185		300					
HUB A	1250	66%	170	1082	300	2500	3	9000	55000	57500
HUB B	1250	66%	170		300					
HUB C	1250	66%	170		300					
HUB 1	1000	50%	158		300		2	14000		
HUB 2	1225	50%	158		300					
HUB 6	2000	50%	256		1000					
HUB5	550	100%	170		300	300				300

2.2. ASPECTS COVERED BY THIS EMPr

The purpose of this Environmental Management Programme ("EMPr") is to provide environmental management and mitigation measures associated with the continued operation, monitoring, maintenance, decommissioning, closure and rehabilitation of the existing underground diesel storage infrastructure forming part of the Section 24G rectification application at the Telkom Park Campus.

The EMPr has specifically been prepared to address the environmental risks associated with the historical unlawful underground fuel storage infrastructure and to provide measures aimed at preventing ongoing pollution, groundwater contamination and environmental degradation pending the eventual decommissioning and removal of the underground fuel storage systems.

SCOPE OF THE EMPR:

This EMPr applies specifically to the existing underground diesel storage infrastructure associated with the Core, Nexus and Hub facilities situated within the Telkom Park Campus and forming part of the Section 24G rectification application.

The EMPr addresses:

- Continued operation of the underground fuel storage infrastructure;
- Groundwater and geohydrological management;
- Monitoring and maintenance requirements;
- Spill response and contamination management;
- Decommissioning of the underground fuel storage infrastructure;

- Rehabilitation of affected areas following decommissioning; and
- Closure objectives associated with the unlawful activity.

This EMPr does not apply to any proposed future fuel storage infrastructure or future aboveground fuel storage systems, which will form part of a separate environmental application process.

EXISTING INFRASTRUCTURE MANAGEMENT MEASURES:

- **Soil and Ground Water Contamination:** To prevent the degradation of soil ecosystems and freshwater ecosystems (stormwater system, ground water and surface water) associated with contamination from a leak or spill from the storage and handling areas.

- **Risk of a Major Incident Occurring:** To prevent an event or fault (such as a spill) from occurring, which could eventually lead to a major incident. A possible cause of such a fault could be, for example, corrosion of a product storage tank or incorrect product handling procedures. An incident would be a toxic release, a fire or an explosion on the premises; with the incident resulting in impacts on humans and assets at and surrounding the site, such as minor injury, major injury and fatality and destructive effect on assets.

OPERATIONAL PHASE:

- **Risk of a Major Incident Occurring:** To prevent an event or fault (such as a spill) from occurring, which could eventually lead to a major incident. A possible cause of such a fault could be, for example, corrosion of a product storage tank or incorrect product handling procedures. An incident would be a toxic release, a fire or an explosion on the premises; with the incident resulting in impacts on humans and assets at and surrounding the site, such as minor injury, major injury and fatality and destructive effect on assets.

- **Waste management:** Potential for soil and freshwater contamination: To minimise risk of contamination through inappropriate transportation or disposal of waste.

- **Impact on use of natural resources:** To minimise use of scarce natural resources (fossil fuels and landfill airspace).

- **Soil, Ground and Freshwater Contamination:** To ensure that any spills or leaks at the site from an incident or from day-to-day product storage and handling activities, are not able to reach any soil or groundwater or freshwater ecosystems nearby or reach the municipal storm water system. And in the event of an incident, that prompt action is taken to remedy the cause of the spill or leak and to address any potential contamination.

- **Health and Safety Impacts on Staff:** To avoid negative impacts on the health and safety of staff due to exposure to hazardous inputs and wastes, high temperature production processes, etc.

- **Noise Impacts:** To avoid “disturbing” noise impacts on neighbouring facilities.

In order to minimise environmental risks associated with the existing underground fuel storage infrastructure, it is imperative that the continued operation, monitoring, maintenance, decommissioning, rehabilitation and closure of the facility are undertaken in accordance with the management measures contained in this EMPr. The measures contained herein are aimed at minimising groundwater contamination risks, pollution incidents, safety risks and long-term environmental degradation associated with the unlawful underground fuel storage infrastructure.

2.3. MAP OF ENVIRONMENTAL SENSITIVITIES

Telkom SA SOC (Ltd), located at 61 Oak Avenue, Highveld, Centurion, is a heavily transformed operational telecommunications and technology campus. The unlawful underground fuel storage infrastructure is situated within previously developed and disturbed areas associated with the existing operational facility.

Notwithstanding the transformed nature of the surface environment, the site is underlain by a dolomitic aquifer system characterised by a high groundwater vulnerability and high groundwater susceptibility rating. Groundwater therefore remains the primary environmentally sensitive receptor associated with the unlawful underground fuel storage infrastructure.

2.4. LEGAL FRAMEWORK

This Environmental Management Programme (EMPR) has been compiled in fulfilment of the requirements of Section 24N of the National Environmental Management Act, Act No. 107 of 1998 (as amended) (NEMA). The contents of this EMPR comply with the requirements for EMPR’s as contained in Appendix 4 to the 2014 EIA Regulations.

The EMPR should also adhere to the local authority by-law requirements as well as any other obligatory environmental and other legal requirements.).

Changes to this Environmental Management Programme can only occur with the written approval of the DFFE and an updated version should also be forwarded to all parties once the amended EMPR has been approved by the DFFE.

It is understood that Telkom SA SOC (Ltd), or any future lawful owner or operator of the facility, will remain responsible for implementation of this EMPR and compliance with its requirements, including any environmental rehabilitation, contamination management or remediation measures that may be required. This is required in terms of Section 28 (Duty of Care and Remediation of Damage) of the National Environmental Management Act, (Act No. 107 of 1998), as amended.

3. STATUTORY OBLIGATIONS

The applicant should adhere to any statutory requirements which may be relevant to operation and or decommissioning of the facility, and comply with all relevant aspects of

contained in the following legislation:

- The National Environmental Management Act, Act 107 of 1998, as amended (NEMA).
- National Water Act, Act 36 of 1998, as amended.
- National Environmental Management Waste Act, Act 59 of 2008
- Waste Classification and Management Regulations, August 2013
- National Norms and Standards for the Storage of Waste, November 2013
- National Norms and Standards for the Assessment of Waste for Landfill Disposal, August 2013
- National Norms and Standards for the Disposal of Waste to Landfill, August 2013
- All relevant by laws and building regulations of the City of Tshwane
- Relevant SANS codes
- The Operational Health and Safety Act, Act 85 of 1993.
- The National Environmental Management Air Quality Act, Act No. 39 of 2004

4. ENVIRONMENTAL OBJECTIVES, TARGETS AND MEASURES

Reference is made to the DEIA Report and associated appendices submitted as part of the Section 24G rectification application to the Department of Forestry, Fisheries and the Environment ("DFFE"). The information contained therein will inform the DFFE's decision regarding the rectification of the existing unlawful underground fuel storage infrastructure in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

This EMPr relates specifically to the continued operation, monitoring, maintenance, decommissioning, rehabilitation and closure of the existing underground fuel storage infrastructure associated with the Telkom Park Campus. Any proposed future replacement fuel storage infrastructure or expansion of the facility will form part of a separate environmental application process.

A number of mitigation and management measures are proposed to minimise and manage environmental impacts associated with the continued operation of the underground fuel storage infrastructure, including groundwater monitoring, contamination management, spill response, maintenance measures, decommissioning requirements and rehabilitation objectives.

4.1. EXISTING INFRASTRUCTURE MANAGEMENT MEASURES

Timeframe for implementation of operational management measures:

The measures below are operational management measures that have been implemented at the facility and must continue to be implemented on an ongoing basis. These measures are aimed at minimising health, safety and environmental risks associated with the continued operation and

eventual decommissioning of the underground fuel storage infrastructure.

Soil and Ground Water Contamination

Objectives: To prevent the degradation of soil ecosystems and freshwater ecosystems (stormwater system, ground water and surface water) associated with contamination from a leak or spill from the storage and handling areas.

Targets: To comply with the recommendations of the various authorities with respect to prevention of pollution of natural resources and best practice.

Measures:

(a) All storage facilities should be compliant in terms of local bylaws and the relevant SANS standards.

(b) The existing fuel storage and reticulation systems must be operated and maintained in a manner that prevents leaching or spillage of product into the soil, groundwater, stormwater system or surrounding areas.

(c) Adequate secondary containment / bunding of all product and storage areas, so that the bund can contain 110% of the capacity of the largest tank in the bund; or in the case of temporary storage (flow bins and drums), the capacity of the bund should be 25% of the volume of the total liquids stored in the bund.

(d) The product loading and offloading area must also be adequately surfaced with impermeable surfacing and bunded.

(e) Tank hoses must be steel reinforced hoses approved for the liquid being discharged and must have self-closing nozzles at the end.

Risk of a Major Incident Occurring

Objectives: To prevent an event or fault (such as a spill) from occurring, which could eventually lead to a major incident. A possible cause of such a fault could be, for example, corrosion of a diesel storage tank or incorrect product handling procedures. An incident would be a toxic release, a fire or an explosion on the premises; with the incident resulting in impacts on humans and assets at and surrounding the site, such as minor injury, major injury and fatality and destructive effect on assets.

Targets: To comply with the extensive design and operational mitigation measures relating to, amongst others, evacuation procedures; health and safety; fire safety; emergency and risk management as well as best practice in the storage and handling of diesel fuel and associated hydrocarbons

Measures:

The rational fire design includes the following measures/recommendations in order to ensure the fire safety of the facility:

(a) The installation is to comply with **SANS 10089** codes of practice.

(b) The installation is to comply with the City Fire By-Laws.

(c) Signage to be displayed in the area, prohibiting smoking **(PV1)**, naked flames **(PV2)**, cell-phone use prohibition **(PV27)**, Beware of Fire Hazard **(WW2)**, Refueling point, **(GA9)**, Flammable liquid sign stating quantity and liquid type in each tank on Chromadek signs a minimum of 190x190mm.

(d) The following fire and safety management measures shall be maintained and implemented at the facility:

- 9-kg DCP Fire Extinguishers in cabinets at close proximity to the installation.
- AR-AFFF Fire Extinguishers in cabinets at close proximity to the installation.
- Installation of fire hose reels.
- Operating procedures for offloading and loading product from delivery vehicles.
- Modify bunded area so as to allow flow to large sump.
- Provision of normal vents and emergency vents on the tanks.
- Provision of fusible links on the tank valves.
- Electrical systems associated with the fuel storage infrastructure shall be appropriately maintained and managed in accordance with applicable safety standards.
- Provision of 3% AR-AFFF foam and foam distribution systems.
- Fuel transfer pumps shall be appropriately maintained and operated in accordance with applicable safety and operational standards.
- Provide a suction Hydrant, in-situ maintainable check valve and a fire department twin booster hydrant conveniently placed after the pump header for emergency boosting.
- Adequate fire response water storage and fire suppression measures shall be maintained at the facility.
- Provide an emergency shut down switch for all electric equipment
- Train site security
- Train and provide a safety organization from existing staff
- Train staff to manage spills
- Train staff to manage equipment
- Provide an emergency plan and train staff
- The facility shall maintain compliance with all applicable fire safety and hazardous substance requirements imposed by the relevant authorities.

The following recommendations do not affect the compliance status of Telkom SA SOC (Ltd) but will improve the site and general site management:

- A Telkom representative should sign off on all the safe disposal certificates during handover.
- Create a separate site complaints register, and customer complaints register.
- Confirm that the site is registered as a Major Hazard Installation with the Fire department.
- Complete a waste audit on Fuel 44 and check if all requirements are being met.
- Ensure that all pipes are supported correctly.
- Investigate installing additional drip trays to fixed line coupling points.

- Complete a site-wide steam pipe audit to identify steam leaks.
- Although housekeeping across the site is very good, some improvement is still required.

4.2. OPERATIONAL PHASE MITIGATION MEASURES

Timeframe for implementation of operational phase measures:

The measures for minimising health, safety and environmental risk associated with operations at the facility, will need to be implemented on an on-going basis throughout the operational lifespan of the underground fuel storage infrastructure and associated decommissioning activities.

Risk of a Major Incident Occurring

Objectives: To prevent an event or fault (such as a spill) from occurring, which could eventually lead to a major incident. A possible cause of such a fault could be, for example, corrosion of a product storage tank or incorrect product handling procedures. An incident would be a toxic release, a fire or an explosion on the premises; with the incident resulting in impacts on humans and assets at and surrounding the site, such as minor injury, major injury and fatality and destructive effect on assets.

Targets: To comply with the extensive design and operational mitigation measures relating to, amongst others, evacuation procedures; health and safety; fire safety; emergency and risk management.

Measures:

(a) The safety of workers is of paramount importance. All workers and managers on site must be sensitised about the safety risks that exist at the facility in terms of fires, vapour cloud explosions and the release of toxic vapours. Workers and management must be trained in the safety and emergency response procedures that apply to the facility and its premises. Regular breathalyser tests must be conducted on site among all workers and management to ensure that no worker consumed alcohol before entering the site or while present on the site. If any worker or manager fails the breathalyser test, he/she shall be subject to the applicable disciplinary procedures.

(b) A specific person must be appointed in accordance with Section 16 (2) of the Occupational Health and Safety Act to take responsibility, together with the appointed Chief Executive Officer, for the health and safety of all workers on site.

(c) All fire extinguishers on the premises must be tested at least once per annum by a certified equipment supplier.

(d) All drums and flow bins that contain flammable liquids must be stored in a bunded area.

(e) Preventative maintenance must be done on equipment on a regular basis.

(f) Disciplinary action must be instituted immediately against any worker or member of management that contravenes the safety rules applicable to the premises.

(g) An Incident and Accident Register must be kept at the site. Please refer to **Annexure G** for example templates.

(h) A Health and Safety Committee must be instituted at the facility. The Committee must meet at least once per month for a review of the safety conditions and status at the premises.

The rational fire design includes the following measures/recommendations in order to ensure the fire safety of the facility:

(a) The installation is to comply with **SANS 10089** codes of practice.
(b) The installation is to comply with the City Fire By-Laws.
(c) Signage to be displayed in the area, prohibiting smoking **(PV1)**, naked flames **(PV2)**, cell-phone use prohibition **(PV27)**, Beware of Fire Hazard **(WW2)**, Refueling point **(GA9)**, Flammable liquid sign stating quantity and liquid type in each tank on Chromadek signs a minimum of 190x190mm.
(d) The following fire and safety management measures shall be maintained and implemented at the facility:

- 9-kg DCP Fire Extinguishers in cabinets at close proximity to the installation.
- AR-AFFF Fire Extinguishers in cabinets at close proximity to the installation.
- Installation of fire hose reels
- Operating procedures for offloading and loading product from delivery vehicles
- Modify bunded area so as to allow flow to large sump.
- Provision of normal vents and emergency vents on the tanks.
- Provision of fusible links on the tank valves.
- Electrical systems associated with the fuel storage infrastructure shall be appropriately maintained and managed in accordance with applicable safety standards.
- Provision of 3% AR-AFFF foam and foam distribution systems.
- Fuel transfer pumps shall be appropriately maintained and operated in accordance with applicable safety and operational standards.
- Provide a suction Hydrant, in-situ maintainable check valve and a fire department twin booster hydrant conveniently placed after the pump header for emergency boosting.
- Adequate fire response water storage and fire suppression measures shall be maintained at the facility.
- Provide an emergency shutdown switch for all electric equipment
- Train site security
- Train and provide a safety organisation from existing staff
- Train staff to manage spills
- Train staff to manage equipment
- Provide an emergency plan and train staff

- The facility shall maintain compliance with all applicable fire safety and hazardous substance requirements imposed by the relevant authorities.

Waste management: Potential for soil and freshwater contamination

Objectives: To minimise risk of contamination through inappropriate transportation or disposal of waste.

Targets: To comply with the requirements of the National Environmental Management: Waste Act and associated regulations.

Measures:

(a) Contaminated stormwater associated with the fuel storage infrastructure shall not be discharged into the municipal stormwater system and shall be appropriately contained and disposed of where required.
(b) No pollution of surface water or ground water resources may occur due to activities on the property
(c) Oil spillages from vehicles on-site must be controlled to prevent pollution of water resources
(d) Soil erosion on site must always be prevented during the operational and decommissioning phases.
(e) All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to
(f) Establish and implement operating procedures for offloading and loading product from delivery vehicles
(g) Training of staff to manage any spills and equipment
(h) Early leak detection systems on all pipelines, tanks and fuel storage infrastructure, and/or regular stock reconciliation must be undertaken to identify any leaks.
(i) All documents relating to volumes and types of waste generated and stored at the site are to be kept on site for inspection by the authorities.

Impact on use of natural resources

Objectives: To minimise use of scarce natural resources (fossil fuels and landfill airspace).

Targets: To apply best practice and to operate within the framework of the national waste Management Strategy.

Measures:

(a) The waste management measures listed above should be implemented.

Geohydrological and Groundwater Management

Objectives: To minimise ongoing groundwater contamination risks associated with the existing underground fuel storage and reticulation infrastructure situated within a dolomitic environment.

Management Measures:

a) The Applicant shall continue groundwater monitoring at all installed monitoring wells associated with the Core, Nexus and Hub fuel storage facilities.
b) Groundwater monitoring shall include groundwater level measurements, free phase product assessments and laboratory analysis where required.
c) Any identified Free Phase Product shall be removed from monitoring wells where practicable and disposed of at an appropriately licensed facility.
d) The underground fuel storage systems and associated reticulation infrastructure shall be routinely inspected for evidence of leakage, structural failure or hydrocarbon release.
e) Any leaks, failures or spill events identified shall be immediately contained and repaired.
f) Spill kits and hydrocarbon containment materials shall be maintained at all fuel storage facilities.
g) Records of all monitoring, maintenance, spill incidents and corrective actions shall be maintained by the Applicant.
h) The existing underground fuel storage infrastructure shall be decommissioned and removed once an alternative lawful fuel supply solution has been implemented
i) Following decommissioning, affected areas shall be rehabilitated and any contaminated material identified during decommissioning activities shall be appropriately managed and disposed of at a suitably licensed facility.

Monitoring: Annual groundwater monitoring reports shall be compiled by a suitably qualified specialist and retained for auditing and compliance purposes.

Soil, Ground and Freshwater Contamination

Objectives: To ensure that any spills or leaks at the site from an incident or from day-to-day product storage and handling activities, are not able to reach any soil or groundwater or freshwater ecosystems nearby or reach the municipal storm water system. And in the event of an incident, that prompt action is taken to remedy the cause of the spill or leak and to address any potential contamination.

Targets: To comply with best practice operating procedures and various authority requirements with respect to prevention of soil and freshwater (stormwater, groundwater, surface water) resources.

Measures:

(a) Stock reconciliation must be undertaken regularly to identify any leaks.
(b) A complete list of all hazardous materials on site must be prepared and kept regularly updated. The MSDS for all hazardous materials must be kept at the facility.
(c) Any incident that results in ingress of product into the soil or water courses must be reported to all relevant authorities, including the DFFE's Pollution Management Directorate and the Department of Water Affairs, within 14 days. This is in compliance with Section 30 (10) of the NEMA and Section 20 (3) of the Water Act. The incident report must include the containment and clean-up procedure and the remediation procedure for the impacted area. Containment, clean-up and remediation must commence immediately.
(d) A spill response kit appropriate to the chemicals and wastes stored, handled and

processed at the site must be always kept at the site.

(e) An Environmental Register must be kept on site. The Incident and Accident Registers may be kept in the Environmental Register. Details of any incidences which may occur, as well as details on how the incident was rectified and / or remediated, must be included in the register. The register should also include chain-of custody receipts from disposal of hazardous waste; copies of any Section 30 Incident Form which may need to be sent to the authorities in the event of an incident; results of on-going emission monitoring; details of complaints from neighbouring parties with respect to nuisance impacts such as noise or odours; etc. The Environmental Register should be kept updated by the designated site Safety Officer.

(f) Groundwater flow direction should be determined at the site. Monitoring wells should be installed up and down gradient of the fuel storage and reticulation areas to allow for groundwater monitoring. The quality of the groundwater will provide a good indication of the impact the facility is having on the subsoils at the site.

(g) Groundwater (where available) sampling should be undertaken during the wet and dry seasons for any Hydrocarbons and any other relevant compounds. These results should be communicated to the relevant authorities upon issue.

(h) Based on the findings of the groundwater quality results and if required, remedial actions should be taken to minimise the environmental impact of the facility on the environment.

Health and Safety Impacts on Staff

Objectives: To avoid negative impacts on the health and safety of staff due to exposure to hazardous inputs and wastes, high temperature production processes, etc.

Targets: To comply with the requirements of the Operational Health and Safety Act, and to implement best practice operating procedures.

Measures:

(a) The standard operating procedures and preventative maintenance schedules must be implemented in order to minimise potential health and safety impacts.

Noise Impacts

Objectives: To avoid “disturbing” noise impacts on neighbouring facilities.
Targets: To ensure that noise levels at the facility do not exceed ambient noise levels, to ensure compliance with the local noise control regulations.

Measures:

(a) A complaints register will be maintained at the facility
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4.3. DECOMMISSIONING, REHABILITATION AND CLOSURE

The existing underground fuel storage infrastructure forming part of the Section 24G rectification application will be decommissioned and removed once an alternative lawful fuel supply solution has been implemented and all required environmental authorisations have been obtained.

Decommissioning activities shall include:

(a) Emptying and cleaning of underground fuel storage tanks;
(b) Removal of residual hydrocarbons and contaminated material;
(c) Removal or sealing of associated reticulation infrastructure;
(d) Assessment of soil and groundwater contamination where required;
(e) Disposal of contaminated material at appropriately licensed facilities;
(f) Rehabilitation of disturbed areas; and
(g) Ongoing groundwater monitoring where necessary.

Should contamination be identified during decommissioning activities, appropriate remediation measures shall be implemented to prevent further migration of contaminants within the underlying dolomitic aquifer system.

The closure objective associated with the unlawful activity is to ensure that the underground fuel storage infrastructure is safely decommissioned, that ongoing pollution risks are minimised, and that affected areas are rehabilitated to a stable condition compatible with the surrounding operational land use.

5. IMPLEMENTATION OF THE EMPR

5.1. ROLES AND RESPONSIBILITIES, INCLUDING MONITORING, AUDITING AND REPORTING

Environmental Control Officer ("ECO")

(a) An independent Environmental Control Officer ("ECO") or suitably qualified environmental specialist shall be appointed to undertake periodic environmental compliance auditing associated with the operation and decommissioning of the underground fuel storage infrastructure.

(b) The responsibilities of the ECO will include monitoring of compliance with the EMPR by the applicant and any sub-contractors during the operational and decommissioning phases.

(c) The ECO has the authority to recommend the cessation of works, or any portion of operational and decommissioning related activity to the applicant. This will be triggered if in his/her opinion the activity has caused or will imminently cause significant damage and/or harm to the environment or is in contravention of the relevant environmental legislation/permits/authorisations applicable to the site and/or activity/ies.

(d) At the frequency determined by the licensing authority, the site should be audited against the conditions of the EMPR by an independent ECO. The audit reports should be submitted to the DFFE and the DWS.

(e) Audit reports must contain monitoring laboratory results, chain-of-custody receipts to show safe disposal of hazardous waste, incident reports from the environmental register, etc.

(f) Thereafter, all on-going environmental monitoring, health and safety training, and other on-going management measures contained in the EMPR, should be reported on to the DFFE and the DWS by the applicant, at the frequency determined by the licensing authority.

(g) Should modifications to this document be required, these must be agreed to by the DFFE.

The Client

The Client – the Client is responsible for employing the ECO, Contractor and any Sub-contractors for the lifecycle of the facility. It is the Client's responsibility to ensure that all appointed parties fulfil their obligations in terms of this EMPR, i.e. the implementation of this EMPR is the Client's responsibility, and the Client must ensure that all activities taking place on the site are conducted in an environmentally responsible manner and in accordance with the requirements of this EMPR.

Council Representative

The Council Representative will be an appropriately qualified environmental officer of the City of Tshwane. This representative will monitor compliance of this EMPR by the client through the ECO.

5.2. DOCUMENTATION AND RECORD KEEPING

(a) List of onsite documentation

An environmental register must be kept at the site, which must include the following:

- An accident and incident register;
- Complaints register;
- Procedure for Pumping of fuel between tanks;
- Management and Control of fuel and incidents;
- Emergency Procedures
- Site evacuation plan/maps; and
- Method statements

In addition, this EMPR, and all other documentation which holds reference or may impact the environmental state of the site must be kept at the site. The right of the public to information shall be respected in accordance with relevant legislation.

(b) Environmental Register

The environmental register should be used to record any relevant daily information related to the operations and current status of the site, including the following information:

- Details of audits and inspections carried out by the ECO and/or as detailed in this EMPR and follow-ups
- Instances of non-conformances found in the EMPR, the date of their occurrence, date of corrective action, and date of completion of preventive action
- Details of chain of custody documentation
- Any other relevant/pertinent daily events
- The environmental register should also contain the accident and incident register and/or the complaints register.

(c) Accident and Incident Register

An accident and incident register must be kept and should include the following information:

- Time, date and place of the accident and/or incident
- Who and what was involved
- A detailed description of the accident or incident

(d) Complaints register

A complaints register must be kept for the recording of all complaints lodged regarding the activities being undertaken on site. It is important that the complainant feels that their concerns have been listened to and that appropriate action (within reason) has been taken to address these.

The complaints register must include:

- Detail of the complaint in clear, well-structured language
- Time and date of complaint and details of complainant for follow-up purposes
- Name of the person who received the complaint
- Description of action that was taken to address the complaint, including date and time of action

(e) Method statements

Method Statements (a template for these purposes is appended to this EMPR) will be required for activities that may result in significant impacts according to the ECO.

These must address the following aspects:

- What – a brief description of the work to be undertaken
- How – a detailed description of the process of work, methods and materials
- Where – a description of the location of the work (if applicable)
- When – the sequencing of actions with commencement and completion date estimates

All Method Statements (MS) must be in place at least **5 working days prior to the relevant operational and decommissioning activities** taking place and must be approved by the ECO prior to being implemented. The following MS must as a minimum be made available to address the following operational and decommissioning related impacts:

- Stormwater Management
- Fire Risk Management
- Waste Management

5.3. ENVIRONMENTAL AWARENESS AND TRAINING

a) For the operational and decommissioning phase, the ECO should conduct on-going Basic Environmental Awareness Training sessions with the Contractor, his staff and subcontractors prior to any work taking place. The Contractors are required to provide a facility and interpreter (if required). All attendees to the Environmental Awareness Training sessions are required to sign an attendance register.

b) For day-to-day operations at the site, it is the responsibility of the Client to ensure that all employees and sub-contractors are fully aware of the operational procedures that must be followed in order to minimise health, safety and environmental risks associated with operations at the facility.

5.4. MATTERS PERTAINING TO NON-CONFORMANCE ONSITE

“Non-conformances” would occur when there are deviations from any of the requirements of this EMPR. This may also include non-compliance with the relevant environmental regulations.

During the operational and decommissioning phase, the Contractor is responsible for reporting non-conformance with the EMPR, to the ECO. The Client and the Contractor, in consultation with the ECO must, thereafter, undertake the following activities:

- Investigate and identify the cause of non-conformance.
- Implement suitable corrective action (appropriate to the magnitude of the environmental impact), as well as prevent recurrence of the problem, with responsibilities assigned for both.

Non-conformances and corrective action must be recorded in the environmental register and included in the audit reports compiled by the ECO.

The Client may introduce some form of penalty system for contractor’s onsite if compliance

with the EMPR proves problematic.

During the operational phase, it is the Client's responsibility to appoint an independent ECO to audit the site in terms of the conditions of the authorisation. The audit report must be submitted to the DFFE and must include any incidences of non-conformance and recommendations for any corrective action required.

In addition, the Client, their contractors, sub-contractors and employees are legally bound by *Section 24(h) National Environmental Management Second Amendment Act, Act No. 107 of 1998,* which states that it is "an offence for any person to contravene conditions applicable to any environmental authorization granted for a listed activity. A person convicted of an offence is liable to a fine not exceeding R5 million or to imprisonment for a period not exceeding ten years, or to both such fine and such imprisonment"

This Environmental Management Programme, when approved, constitutes a Condition applicable to an Environmental Authorisation and any transgression would thus trigger Section 24(h) of the above-mentioned Act. The exact penalty and fines will be decided on, subsequent to consultation with DFFE and the local municipality.

All staff working on-site must be made aware of the consequences of non-conformance.

6. TERMS USED IN THIS EMPR

The terms used include the following:

The term **'client'** means the owner of the facility to which this EMPR applies.

The term **'construction'** means all organized activities concerned with demolition, building, landscaping, maintenance, civil engineering, process engineering, heavy engineering and mining.

The term **'contractor'** means an organisation that contracts with the applicant to carry out the work under a contract, including construction and other services.

The term **'decommission'** means all organized activities concerned with demolition of infrastructure (above and below ground) on site as well as the associated removal of infrastructure on site as well as the rehabilitation and/or site clean up after infrastructure has been removed.

The term **'design'** means the process (and product) of converting a brief into design details ready for documentation, including concept design and design development, and then documentation or detailing of the technical and other requirements for the project in a written form that details the project product sufficiently for it to be constructed or otherwise provided.

The term **'environmental opportunity'** means a potential for beneficial environmental impacts (such as an improvement in air or water quality through environmentally friendly technology alternatives).

The term **'environmental risk'** means a potential for adverse environmental impacts (such as pollution of a water source during decommissioning activities).

The term **'management'** means the planning and interactive controlling of human and material resources to achieve time, cost, quality, performance, functional and scope requirements. It involves the anticipation of changes due to changing circumstances and the making of other changes to minimise adverse effects.

The term **'procurement'** means the collection of activities performed by and for an agency to acquire services and products, including assets, beginning with the identification/detailing of service requirements and concluding with the acceptance (and where applicable, disposal) of the services and products.

The term **'project'** means an undertaking with a defined beginning and objective by which completion is identified. Project delivery may be completed using one contract or a number of contracts.

The term **'service provider'** means a contractor, subcontractor, supplier, consultant (including an agency) and sub-consultant (contracting with a consultant), and their service providers, that contract with a customer to carry out construction, decommissioning, provide other products (including goods) and/or provide services.

The term **'subcontractor'** means an organisation that contracts with a contractor as the customer to carry out construction and related services, and/or provide other products.

The term **'supplier'** means an organisation that contracts with a contractor or Principal Agent to supply a product and/or service.

EMPR ANNEXURE B
POSSIBLE METHOD STATEMENT TEMPLATE

METHOD STATEMENT FOR THE:

……..

This method statement is to be completed by the Contractor (in consultation with the ECO) at least 5 working days prior to the proposed commencement date of the said work and represents a binding agreement to the Method Statement by all site Contractors and Subcontractors involved in the work for which the Method Statement is submitted.

DATE OF SUBMISSION:……

CONTRACTOR:……..

SUBCONTRACTORS (IF RELEVANT):……

A) Describe in detail ***what*** work is to be undertaken?

B) Describe in detail ***where*** on the site the works are to be undertaken and the ***extent***? Provide sketch plan and grid block reference.

C) ***When*** will the works start and what is the anticipated finishing date of these works?

D) ***How*** are the works to be undertaken?

1) Lead supervisor/ foreman name and contact details:

2) Number of personnel:

3) Operational, maintenance or decommissioning activities:

4) Plant and machinery to be used:

5) Materials to be stored (specify hazardous materials):

6) Other:

E) What ***environmental impacts are anticipated and what precautions*** are proposed to prevent these impacts? (refer to the relevant sections of the EMPR for guidance and provide a general camp layout)

Camp site demarcation:
Toilet facilities:
Litter:
Security:
Plant/machinery (operation, servicing, management, storage, refuelling etc.):
Emergencies and fire:
Hazardous materials (handling, management, storage etc.):
Have all personnel involved been through an environmental induction course?
Hazardous substances spill remediation and containment measures:
Other:

DECLARATIONS BY PARTIES

1) CONTRACTOR

I UNDERSTAND THE CONTENTS OF THE METHOD STATEMENT AND THE SCOPE OF THE WORKS REQUIRED OF ME. I FURTHER UNDERSTAND THAT THE METHOD STATEMENT MAY BE AMENDED ON APPLICATION TO THE ABOVE SIGNATORIES, AND THAT THE ENVIRONMENTAL CONTROL OFFICER WILL AUDIT MY COMPLIANCE WITH THE CONTENTS OF THIS METHOD STATEMENT.

_____ (PRINT NAME)

_____ (SIGNED) DATED: _____

2) ENVIRONMENTAL CONTROL OFFICER (ECO)

THE WORK DESCRIBED IN THIS METHOD STATEMENT, IF CARRIED OUT ACCORDING TO THE METHODOLOGY DESCRIBED, IS SATISFACTORILY MITIGATED TO PREVENT AVOIDABLE ENVIRONMENTAL HARM.

_____ (PRINT NAME)

_____ (SIGNED) DATED: _____

3) PRINCIPAL AGENT

THE WORK DESCRIBED IN THIS METHOD STATEMENT, IF CARRIED OUT ACCORDING TO THE METHODOLOGY DESCRIBED, IS SATISFACTORILY MITIGATED TO PREVENT AVOIDABLE ENVIRONMENTAL HARM.

_____ (PRINT NAME)

_____ (SIGNED) DATED: _____

EMPR ANNEXURE C
ROLE OF THE ECO

DUTIES OF THE ECO

1. Ensuring that the EMPR conditions are adhered to at all times and taking action where the specifications are not being followed.
2. Ensuring that environmental impacts are kept to a minimum.
3. Reviewing and approving method statements in consultation with the Principal Agent.
4. Advising the contractor on environmental issues and assisting in developing environmentally responsible solutions to problems.
5. Reporting to the applicant on a regular basis and advising of any environmental impacts.
6. Attending site meetings (when necessary) and giving a report back on the environmental issues at these meetings and other meetings that may be called regarding environmental matters.
7. Inspecting and auditing the site and surrounding areas regularly.
8. Establishing and monitoring an on-going environmental awareness program in conjunction with the contractor.
9. Requesting the removal of person(s) and/or equipment not complying with the specifications.
10. Keeping both a written and photographic record of progress on site from an environmental perspective, and an ad hoc record of all incidents or events on site with environmental ramifications. These records should be dated and accurately catalogued in the onsite logbook, and separate audit reports.
11. Undertaking continual internal review of the EMPR and compiling environmental audit reports for the operational and decommissioning phases where required.
12. The ECO will submit all written instructions and verbal requests to the contractor via the appropriate manager.

EMPR ANNEXURE F
INCIDENT REGISTER AND BASIC ACCIDENT REGISTER TEMPLATES

INCIDENT REGISTER (EXAMPLE)

"*Incident*" means - an unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed					
Date (yyyy/mm/dd)	**Incident**	**Comments** *(Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)*	**Corrective Action Taken** (*Give details and attach documentation as far as possible)*	**Reference no. for On-Site Logbook** (e.g. Rv 6/12 Inc 1)	**Signature**

BASIC ACCIDENT REGISTER (EXAMPLE)

Date (yyyy/mm/dd)	**Accident**	**Names of Persons Involved**	**Comments, Including Injuries Sustained** *(Include any possible explanations for current accident. Include photographs, records etc. if available)*	**Corrective Action Taken** (*Give details and attach documentation as far as possible)*	**Reference no. for OHS Documentation and Attachments** *(e.g. Rv 6/12 Acc 1)*	**Signature**

EMPR ANNEXURE G

CONTRACTS WITH WASTE SERVICE PROVIDER

EMPR ANNEXURE H

EAP CURRICULUM VITAE'S