

Closure
Plan

Decommissioning of the University of
Pretoria's Onderstepoort Incinerator
WML Ref: To be confirmed



EARTHnSKY
environmental



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DEFINITIONS

Alternatives

In relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the-

- a) property on which or location where the activity is proposed to be undertaken;
 - b) type of activity to be undertaken;
 - c) design or layout of the activity;
 - d) technology to be used in the activity; or
 - e) operational aspects of the activity;
- and includes the option of not implementing the activity.

Application

An application for a Waste Management Licence (WML).

Basic Assessment Report

A report contemplated in regulation 21 of the EIA Regulations, 2014.

Buffer Area

Unless specifically defined, means an area extending 10 kilometres from the proclaimed boundary of a world heritage site or national park and 5 kilometres from the proclaimed boundary of a nature reserve, respectively, or that defined as such for a biosphere.

Contaminated

In relation to Part 8 of Chapter 4, means the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration that is normally present in or under that land, which substance or micro-organism directly or indirectly affects or may affect the quality of soil or the environment adversely.

Cumulative Impact

In relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.

Dangerous Good

Goods containing any of the substances as contemplated in South African National Standard No. 10234, supplement 2008 1.00: designated "List of classification and labelling of chemicals in accordance with the Globally Harmonized Systems (GHS)" published by Standards South Africa, and where the presence of such goods, regardless of quantity, in a blend or mixture, causes such blend or mixture to have one or more of the characteristics listed in the Hazard Statements in section 4.2.3, namely physical hazards, health hazards or environmental hazards.

Decommissioning

In relation to waste treatment, waste transfer or waste disposal facilities, means the planning for and management and remediation of the closure of a facility that is in operation or that no longer operates.

Development

The building, erection, construction or establishment of a facility, structure or infrastructure, including associated earthworks or borrow pits, that is necessary for the undertaking of a listed or specified activity, including any associated post development monitoring, but excludes any modification, alteration or expansion of such a facility, structure or infrastructure, including associated earthworks or borrow pits, and excluding the redevelopment of the same facility in the same location, with the same capacity and footprint.

Development footprint

Any evidence of physical alteration as a result of the undertaking of any activity.

Disposal

The burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land.

EAP

An environmental assessment practitioner as defined in section 1 of NEMA.

EMPr

An environmental management programme contemplated in regulations 19 and 23 of the EIA Regulations, 2014.

Environment

The surroundings (biophysical, social and economic) 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 Assessment

A systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes Basic Assessment and Scoping and Environmental Impact Reporting.

Facility

A place, infrastructure, structure or containment of any kind including associated structures or infrastructure, wherein, upon or at, a waste management activity takes place and includes a waste transfer facility, a waste storage facility, container yard, waste disposal facility, incinerators, lagoons, recycling, co-processing or composting facilities.

Holder of waste

Any person who imports, generates, stores, accumulates, transports, processes, treats, or exports waste or disposes of waste.

Incineration

Any method, technique or process to convert waste to flue gases and residues by means of oxidation.

Independent

In relation to an EAP, a specialist or the person responsible for the preparation of an environmental audit report, means-

- a) that such EAP, specialist or person has no business, financial, personal or other interest in the activity or application in respect of which that EAP, specialist or person is appointed in terms of the EIA Regulations; or
- b) that there are no circumstances that may compromise the objectivity of that EAP, specialist or person in performing such work;

excluding -

- (i) normal remuneration for a specialist permanently employed by the EAP; or
- (ii) fair remuneration for work performed in connection with that activity, application or environmental audit.

Indigenous Vegetation

Vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

Industrial Complex

An area used or zoned for industrial purposes, including bulk storage, manufacturing, processing or packaging purposes.

Mitigation

To anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible.

Operational area

An area where waste is handled including the storage areas.

Phased Activities

An activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity.

Registered Interested and Affected Party

In relation to an application, means an Interested and Affected Party whose name is recorded in the register opened for that application in terms of regulation 42 of the EIA Regulations, 2014.

Significant Impact

An impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence.

Specialist

A person that is generally recognised within the scientific community as having the capability of undertaking, in conformance with generally recognised scientific principles, specialist studies or preparing specialist reports, including due diligence studies and socio-economic studies.

Systematic Biodiversity Plan

A plan that identifies important areas for biodiversity conservation, taking into account biodiversity patterns (i.e., the principle of representation) and the ecological and evolutionary processes that sustain them (i.e., the principle of persistence). A systematic biodiversity plan must set quantitative targets/thresholds for aquatic and terrestrial biodiversity features in order to conserve a representative sample of biodiversity pattern and ecological processes.

Treatment

Any method, technique or process that is designed to-

- (a) change the physical, biological or chemical character or composition of a waste; or
 - (b) remove, separate, concentrate or recover a hazardous or toxic component of a waste; or
 - (c) destroy or reduce the toxicity of a waste,
- in order to minimise the impact of the waste on the environment prior to further use or disposal.

Waste

(a) any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as defined in Schedule 3 to this Act; or

(b) any other substance, material or object that is not included in Schedule 3 that may be defined as a waste by the Minister by notice in the Gazette, but any waste or portion of waste, referred to in paragraphs (a) and (b), ceases to be a waste-

- (i) once an application for its re-use, recycling or recovery has been approved or, after such approval, once it is, or has been re-used, recycled or recovered;
- (ii) where approval is not required, once a waste is, or has been re-used, recycled or recovered;
- (iii) where the Minister has, in terms of section 74, exempted any waste or a portion of waste generated by a particular process from the definition of waste; or
- (iv) where the Minister has, in the prescribed manner, excluded any waste stream or a portion of a waste stream from the definition of waste.

Waste treatment facility

Any site that is used to accumulate waste for the purpose of storage, recovery, treatment, reprocessing, recycling or sorting of that waste.

Watercourse

- (a) a river or spring;
- (b) a natural channel in which water flows regularly or intermittently;
- (c) a wetland, pan, lake or dam into which, or from which, water flows; and

any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and
a reference to a watercourse includes, where relevant, its bed and banks.

Wetland

Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

ABBREVIATIONS

BAR	-	Basic Assessment Report
BID	-	Background Information Document
CRR	-	Comments and Response Report
DEFF	-	Department of Environment, Forestry and Fisheries (National)
DWS	-	Department of Water and Sanitation
EA	-	Environmental Authorisation
EAP	-	Environmental Assessment Practitioner
EIA	-	Environmental Impact Assessment
EMF	-	Environmental Management Framework
EMP	-	Environmental Management Programme
GN	-	Government Notice
I&AP	-	Interested and Affected Party
NEMA	-	National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended
NEM:WA	-	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as amended
NHRA	-	National Heritage Resources Act, 1999 (Act No. 25 of 1999), as amended
R	-	Regulation
SAHRA	-	South African Heritage Resources Agency

DECLARATION OF INDEPENDENCE

I, Lizette Kloppers, in my capacity as Environmental Assessment Practitioner, hereby declare that I –

- Act as an independent consultant;
- Do not have any business, financial, personal or other interest in the activity or application in respect of which I have been appointed in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), other than fair remuneration for the work performed; and
- That there are no circumstances that may compromise my objectivity in performing the work that I have been appointed for.



Lizette Kloppers (Pr.Sci.Nat.)
Environmental Assessment Practitioner
SACNASP Reg. No. 115453
EAPASA Reg No. 2019/767

2021-01-13

Date

1. PROJECT TITLE

Decommissioning of the University of Pretoria's Onderstepoort Incinerator.

2. APPLICANT DETAILS

- Applicant Name: University of Pretoria
- Postal Address: Private Bag X20, Hatfield, 0028

3. ENVIRONMENTAL ASSESSMENT PRACTITIONER DETAILS

- Environmental Assessment Practitioner Company: EARTHnSKY Environmental (Pty) Ltd.
- Contact Person: Lizette Kloppers
- Postal Address: PO Box 5419, Rietvalleirand, 0174
- Telephone Number: 061 524 2211 / 067 021 3401
- Fax Number: 086 552 6837
- Email Address: lizette@earthnsky.co.za / lizette.earthnsky@gmail.com
- Qualifications and expertise of the EAP to prepare the Report: MSc Environmental Management – University of London External Programme; More than 9 years' experience as an EAP
- Professional affiliation/registration: SACNASP Reg. No. 115453; EAPASA Reg No. 2019/767

The EAP's Curriculum Vitae is attached to this report under Addendum 1.

4. LOCATION OF THE PROPOSED DEVELOPMENT AND ACTIVITIES

The property for the proposed development and its associated activities is as follows:

- Property/Land Parcel: Portion 0 (remaining extent) of the Farm Onderstepoort 478 JR
- 21-digit Surveyor General Code: T0JR00000000047800000
- Property size: 65.8340Ha
- Project site GPS coordinates: 25°38'54.83"S; 28°10'43.11"E

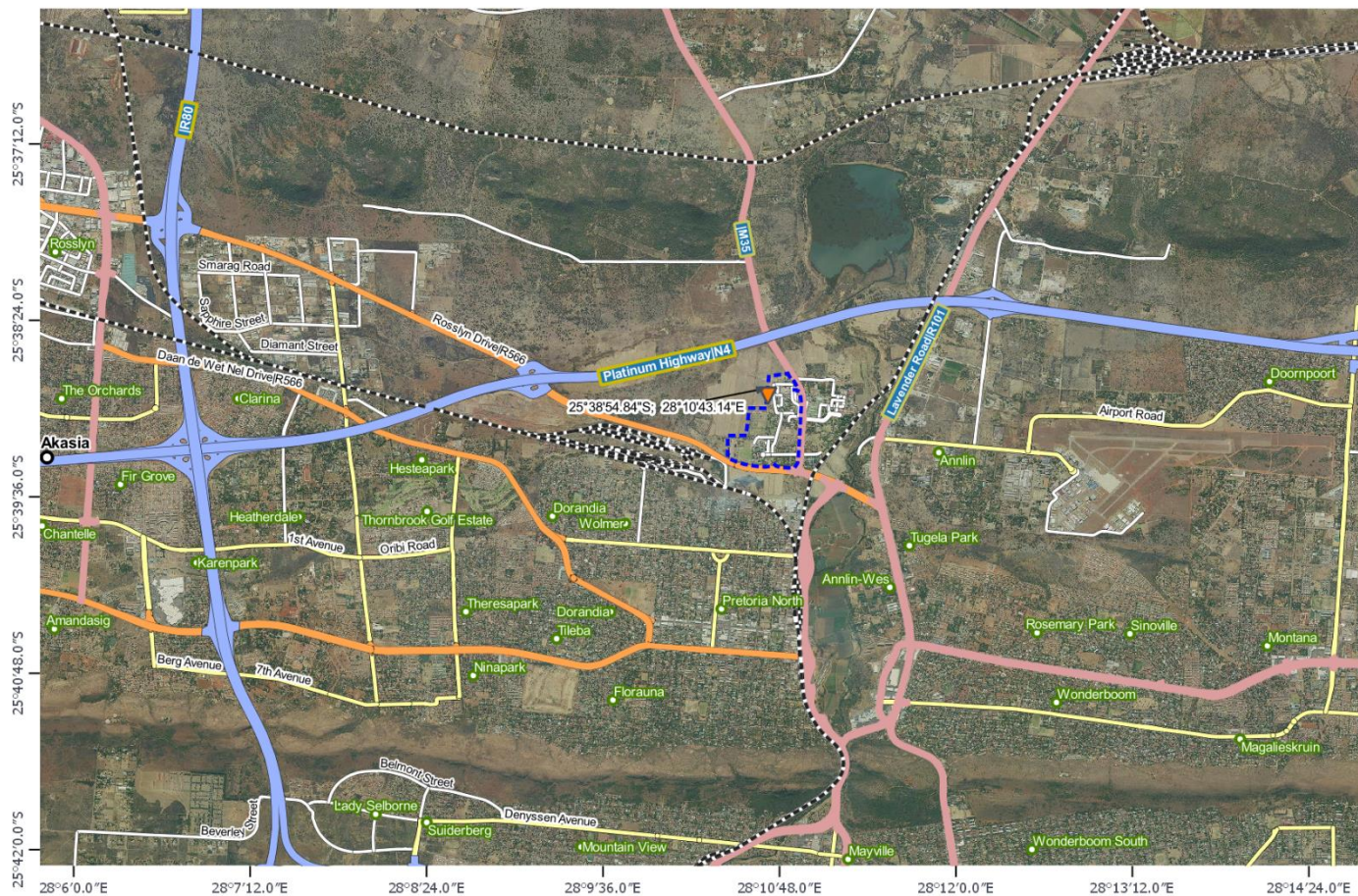
The project location is ±10km to the north of the Pretoria CBD, in the Tshwane Metropolitan Municipality, Gauteng Province.

A locality map, provided on the next page, shows the location of the project property, at an appropriate scale.

University of Pretoria: Onderstepoort Campus
 Project: Decommissioning of Incinerator
 Locality Map

Legend

- Incinerator
- Onderstepoort Campus
- Town
- Suburb
- Motorways
- Primary Road
- Secondary Road
- Tertiary Road
- Unclassified Road
- Railway



ESPG: 4326 - World Geodetic System 1984
 0 1 000 2 000 3 000 4 000 m

Scale: 1:50000

Source: National Geo-Spatial Information (NGI), Cadastral map, Gauteng, 2018; Chief Directorate: National Geo-Spatial Information, Imagery_25cm, 2018; Windfinder, dominant wind direction, observations between 07/2014 - 06/2020 daily, 2020.

Figure 1: Project site locality map

5. INTRODUCTION

5.1 Background to Applicant and Existing Operations

The University of Pretoria (the applicant) Faculty of Veterinary Science is located on the Farm Onderstepoort 478 JR, approximately 10km to the north of the Pretoria CBD.

The Faculty of Veterinary Science, located at the Onderstepoort Campus, is one of 46 veterinary faculties in Africa and the only one of its kind in South Africa. It is the second oldest faculty in Africa, dating back to the early 1920's. With the exception of the faculties in Khartoum (Sudan, 1938), and Cairo (Egypt, 1946), all the other African faculties were established after 1960. The Faculty has five academic Departments responsible for teaching, research and service rendering. These activities are further facilitated by well-developed support services provided by an academic hospital, various departmental laboratories, general and student administrative sections, a teaching animal unit and a number of research centres. The Veterinary Academic Hospital provides state of the art facilities for the clinical departments and is the focus of the Faculty's service-rendering activities to the immediate community and also a national referral facility (<https://www.up.ac.za/faculty-of-veterinary-science/article/16343/about-veterinary-science>).

The Faculty of Veterinary Science has an incinerator (the Onderstepoort Incinerator) that is used to incinerate animal carcasses, contaminated bedding (shavings) and contaminated material (paper and DNA packaging) generated by the various Veterinary Departments located on the Onderstepoort Campus. The waste is stored in sealed containers for bio-security reasons and is weighed before being incinerated. After incineration, the remaining ash is removed from the incinerator (approximately 20kg of ash) and is placed into nearby waste skips. The skips and ash are removed by a waste contractor for disposal off-site on a regular basis.

The incineration of these waste types used to occur once a day, mainly in the morning. Batch incineration of mixed waste (800kg animal carcasses together with 250kg of shavings) for a period of 3 to 4 hours was regular practice. Currently, the incinerator is only operated for maintenance purposes. The applicant has a contract with a waste management service provider for the removal of the previously listed waste streams. The contractor removes the waste streams to a licensed waste management facility where the waste is incinerated.

Existing buildings on site

The following infrastructure is currently present at the project site:

- The Onderstepoort incinerator;
- Brick-walled enclosure with palisade gates (within which the incinerator is located);
- Un 8m³ underground diesel tank; and
- A fuel dispensing station (fuel pump no longer in place).

5.2 Proposed project

The project entails the decommissioning and demolishing of the University of Pretoria's Onderstepoort Incinerator. The incinerator was constructed prior to 1989 (the exact date is unknown) and uses outdated technology. The outdated technology does not ensure compliance with the Maximum Emission Rates as stipulated in the incinerator's Atmospheric Emission Licence (Licence Number: 9/16/1/2/38/R; issued on 12 August 2019). It is financially more feasible for the University of Pretoria to dispose of the infectious waste generated at Onderstepoort, when compared to the costs that would be involved in operating the incinerator in future. Operational costs would include, for example, air quality monitoring costs and costs to replace/upgrade abatement

technology on the incinerator to enable compliance to the Maximum Emission Rates. The applicant therefore wishes to rather decommission and demolish its Onderstepoort incinerator.

The proposed decommissioning will entail the dismantling and demolishing of the incinerator itself and the removal of the dismantled parts from site. Material that can be re-cycled or re-used will be provided to suitable facilities for re-use or recycling. Remaining material will be disposed at an adequately licensed landfill site/waste management facility. The brick-walled enclosure within which the incinerator is currently located as well as the concrete floor of the enclosure will also be removed. The area will then be converted into a landscaped garden. An unused freezer at the Pathology Department of the Onderstepoort Complex will be converted and used for the storage of the waste generated by the Veterinary Science activities at the Onderstepoort Campus prior to the waste being removed from site by a waste contractor. The unused freezer that will be used for the storage of waste has the following dimensions: 3.16m x 4.83m x 2.9m (44.26m³). The small size of the waste storage container means that it will not require a Registration application in terms of the National Norms and Standards for the Storage of Waste (GN No. 926 of 29 November 2013).

An underground diesel tank linked to the incinerator will also be removed. The diesel tank is owned and managed by TOTAL and has a capacity of 8m³. The removal will be managed by TOTAL and they will be responsible for any rehabilitation of contaminated soil in the vicinity of the tank (should any soil contamination be present).

6. CLOSURE OBJECTIVES

The closure objective is for the site to be converted into a landscaped garden once the incinerator, its brick-walled enclosure and the concrete floor of the enclosure has been removed.

7. PROPOSED MECHANISMS FOR MONITORING COMPLIANCE WITH AND PERFORMANCE ASSESSMENT AGAINST THE CLOSURE PLAN AND REPORTING THEREON

Construction Phase

Not applicable.

Operational Phase

Not applicable.

Decommissioning and Post-Decommissioning Phases

The Applicant must undertake regular site inspections. The Applicant must appoint an independent Environmental Control Officer (ECO) to audit compliance to the Environmental Management Programme during the decommissioning phase of the proposed project. It is recommended that the ECO audit the site on a monthly basis during the decommissioning phase and that a post-decommissioning audit is also conducted once all decommissioning activities have been completed. Monthly audit reports should be compiled subsequent to each audit and provided to the Applicant for record keeping. The post-decommissioning audit report must be provided to the Applicant for record keeping and also submitted to the National Department of Environment, Forestry and Fisheries.

8. MEASURES TO REHABILITATE THE ENVIRONMENT AFFECTED BY THE UNDERTAKING OF ANY LISTED ACTIVITY OR SPECIFIED ACTIVITY AND ASSOCIATED CLOSURE TO ITS NATURAL OR PREDETERMINED STATE OR TO A LAND USE WHICH CONFORMS TO THE GENERALLY ACCEPTED PRINCIPLE OF SUSTAINABLE DEVELOPMENT, INCLUDING A HANDOVER REPORT, WHERE APPLICABLE

The project area (the incinerator, its brick-walled enclosure and the concrete floor of the enclosure) will be converted into a landscaped garden once the incinerator and associated infrastructure has been removed. This land use will conform to the surrounding land use within the Onderstepoort Complex, namely roads, existing buildings, parking spaces and landscaped gardens. As the project area is within the confines of the Onderstepoort Complex, it is not feasible to return the site to a completely natural state (i.e., Marikana Thornveld).

A handover report is not considered applicable to the proposed project, as the proposed project is small in terms of its development footprint and environmental impacts.

9. INFORMATION ON ANY PROPOSED AVOIDANCE, MANAGEMENT AND MITIGATION MEASURES THAT WILL BE TAKEN TO ADDRESS THE ENVIRONMENTAL IMPACTS RESULTING FROM THE UNDERTAKING OF THE CLOSURE ACTIVITY

9.1 Impact Management Outcome and Action Table

Refer to *Table 1* below.

Table 1: Proposed avoidance, management and mitigation measures that will be taken to address the environmental impacts resulting from the undertaking of the closure activity

Activity	Aspect	Impact	Impact Management Outcomes (Objectives)	Impact Management Actions and Statements in order to avoid, modify, remedy, control or stop pollution or environmental degradation (mitigation measures)	Responsible party/parties
Planning and Design Phase					
Environment in general					
Planning for and design of the decommissioning aspects of the Onderstepoort Incinerator.	Ineffective planning for the proposed decommissioning of the Onderstepoort Incinerator.	Environmental impacts during the decommissioning and post-decommissioning phases.	To ensure effective planning and design so that environmental impacts during the decommissioning and post-decommissioning phases can be minimised and/or avoided.	<ul style="list-style-type: none"> The decommissioning contractor must be provided with a copy of the Waste Management Licence and Environmental Management Programme prior to commencing work on site. These documents must also form part of tender and contract documents for the decommissioning appointment, in order to ensure that the appointed contractor is aware of the environmental requirements to be implemented during the decommissioning phase. The applicant or decommissioning contractor must ensure that all employees attend Environmental Awareness Training (the Environmental Awareness Plan that is contained in the EMP for this project) prior to the decommissioning activities commencing. Proof of training must be kept on record by the applicant. The decommissioning contractor must determine what Personal Protective Equipment (PPE) will be required for workers during the decommissioning activities and the relevant PPE must be provided to workers. Ways to cordon off or demarcate the decommissioning area should be identified and implemented prior to decommissioning activities commencing. This is to ensure that access to the area is restricted to workers involved in the decommissioning activities and can include the erection of danger tape or a temporary fence or screen. Planning should also be undertaken for safety signage to be displayed at the decommissioning area. This should be implemented before the decommissioning activities commence. Signage indicating that the site is a "Demolition Site", signage indicating the risks associated with the site, as well as emergency numbers must be displayed. The decommissioning contractor must determine the firefighting equipment requirements for the decommissioning area and the relevant equipment must be present onsite before the decommissioning activities commence. The applicant must ensure that the appointed decommissioning contractor is aware of the requirements for Safe Disposal Certificates to be obtained and provided to the applicant for all decommissioning waste that will be removed from the Onderstepoort Complex and disposed to landfill. The applicant must ensure that the appointed decommissioning contractor is aware of the requirements for Waste Manifest Documents to be completed and provided to the applicant for all hazardous decommissioning waste that will be removed from the Onderstepoort Complex. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Pre-Construction Phase					
Not Applicable					
Construction Phase					
Not Applicable					
Operational Phase					
Not Applicable					
Decommissioning and Post-decommissioning Phases					
Heritage and Palaeontological Resources					
Dismantling and decommissioning of the Onderstepoort Incinerator.	Removal of possible cultural and heritage resources together with the incinerator infrastructure.	Possible disturbance or destruction of cultural and heritage resources.	To protect any cultural and heritage resources that may be present at the project site.	<ul style="list-style-type: none"> Should any cultural or heritage resources, sites, features or objects be exposed during the decommissioning activities, all activities in the area must be stopped and a heritage specialist must be contacted to investigate the site and recommend the way forward. SAHRA should also be contacted. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	Removal of possible palaeontological resources together with the incinerator infrastructure.	Possible disturbance or destruction of palaeontological resources.	To protect any palaeontological resources that may be present at the project site.	<ul style="list-style-type: none"> Should any palaeontological resources be exposed during the decommissioning activities, all activities in the area must be stopped and a heritage specialist must be contacted to investigate the site and recommend the way forward. SAHRA should also be contacted. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Fauna					

Activity	Aspect	Impact	Impact Management Outcomes (Objectives)	Impact Management Actions and Statements in order to avoid, modify, remedy, control or stop pollution or environmental degradation (mitigation measures)	Responsible party/parties
Dismantling and decommissioning of the Onderstepoort Incinerator.	Possible disturbance of any fauna species that may be present onsite.	Injury to, or death of, fauna species that may be present onsite.	To protect any fauna species that may be present onsite.	<ul style="list-style-type: none"> No fauna species may be killed by contractors working onsite. Should snakes be encountered, they should be relocated safely. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Air Quality					
Dismantling and decommissioning of the Onderstepoort Incinerator.	Generation of dust.	Nuisance and air pollution.	To minimise the generation of dust from the dismantling and demolition activities.	<ul style="list-style-type: none"> Decommissioning activities that will generate the most dust should be limited to days with low wind speeds, as far as possible. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	The incinerator no longer being in use.	Improvement in air quality in the immediate vicinity of the site.	Positive impact. No impact management objectives therefore required.	Positive impact. No mitigation measures are therefore required.	Not applicable
Soil					
Dismantling and decommissioning of the Onderstepoort Incinerator.	Hydrocarbon or chemical spillages or leakages from contractor vehicles or equipment.	Possible soil pollution.	To prevent and minimise soil pollution.	<ul style="list-style-type: none"> Any hydrocarbon or chemical spillages or leakages must immediately be cleaned and disposed as hazardous waste. Any leaking contractor vehicles should be repaired by the contractor and a drip tray should be placed beneath the leakage to contain the spillage. Chemicals and hydrocarbon liquids, such as oils, must be kept on impermeable surfaces (e.g., concreted areas). A spill kit must be available onsite to clean any hydrocarbon or chemical spillages or leakages. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	Incorrect management, storage and disposal of waste.	Possible soil pollution.	To prevent and minimise soil pollution.	<ul style="list-style-type: none"> Refuse bins/containers should be provided for domestic waste, such as food waste. Waste must be managed according to its hazard classification (general vs hazardous waste). General and hazardous waste streams must not be mixed. Waste generated during the decommissioning activities must be stored in designated areas and/or containers. Waste destined for re-use/re-cycling should be stored separately from waste destined for disposal to landfill. Waste may only be removed from site to adequately licensed waste management facilities for re-use, recycling or disposal, according to the Waste Type of each waste stream. No dumping of waste is permitted. Safe Disposal Certificates must be obtained for all waste that is disposed to landfill and these records must be kept on file by the applicant for a period of at least 5 years. Waste Manifest Documents must be obtained for all hazardous waste that is removed from the site and these records must be kept on file by the applicant for a period of at least 5 years. Littering shall not be permitted onsite. The City of Tshwane Waste Management By-Law must be adhered to. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	Spillages from chemical toilets (if required).	Possible soil pollution.	To prevent and minimise soil pollution.	<ul style="list-style-type: none"> Should chemical toilets be required during the proposed decommissioning, the toilet(s) should be placed on impermeable surface (e.g., a concreted area). The chemical toilet(s) should be serviced/cleaned regularly. Any runoff of sewage from the chemical toilet(s) must immediately be contained and cleaned. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the underground diesel tank linked	Possible leakage of diesel from the underground diesel tank.	Possible soil pollution.	To remediate any possible soil pollution from the underground diesel tank that is linked	<ul style="list-style-type: none"> The underground diesel tank is the property of TOTAL and is leased by the University of Pretoria. TOTAL will therefore be responsible for removal of the diesel tank that is connected to the Onderstepoort Incinerator. The applicant must request TOTAL to remove the diesel tank once this Waste Management Licence application process has been completed. The applicant must ensure that TOTAL determines whether the underground diesel tank has caused any contamination, should the tank perhaps have leaked diesel into the environment surrounding the tank. 	<ul style="list-style-type: none"> Applicant TOTAL

Activity	Aspect	Impact	Impact Management Outcomes (Objectives)	Impact Management Actions and Statements in order to avoid, modify, remedy, control or stop pollution or environmental degradation (mitigation measures)	Responsible party/parties
to the Onderstepoort Incinerator (to be addressed by TOTAL when the underground diesel tank is removed by them).			to the Onderstepoort incinerator.	<ul style="list-style-type: none"> The applicant must ensure that, should land contamination be present at the underground diesel tank, TOTAL contacts the National Department of Environment, Forestry and Fisheries Directorate: Land remediation to confirm whether a Remediation Order is required before remediation of the contamination can be commenced with. The applicant must ensure that, should a Remediation Order be required, TOTAL obtains the required Remediation Order, and that the required remediation of the contamination is completed by TOTAL. The applicant must ensure that TOTAL removes the diesel tank in its entirety subsequent to the above-listed matters having been addressed and that a final report is received from TOTAL confirming that any contamination has been completely remediated and that the diesel tank has been removed and decommissioned. 	
Surface and groundwater					
Dismantling and decommissioning of the Onderstepoort Incinerator.	Hydrocarbon or chemical spillages or leakages from contractor vehicles or equipment.	Possible surface- and/or groundwater pollution.	To prevent and minimise surface- and/or groundwater pollution.	<ul style="list-style-type: none"> Any hydrocarbon or chemical spillages or leakages must immediately be cleaned and disposed as hazardous waste. Any leaking contractor vehicles should be repaired by the contractor and a drip tray should be placed beneath the leakage to contain the spillage. Chemicals and hydrocarbon liquids, such as oils, must be kept on impermeable surfaces (e.g., concreted areas). A spill kit must be available onsite to clean any hydrocarbon or chemical spillages or leakages. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	Incorrect storage of hazardous chemicals or hydrocarbon liquids.	Possible contamination of stormwater runoff.	To prevent and minimise surface- and/or groundwater pollution.	<ul style="list-style-type: none"> Hazardous chemicals and hydrocarbon liquids, such as oils, must be kept on impermeable surfaces (e.g., concreted areas), preferably in a bunded container or drip tray and in a roofed area where rainwater cannot come into contact with the stored substances. Any hydrocarbon or chemical spillages or leakages must immediately be cleaned, and the material disposed as hazardous waste. Any runoff of contaminated stormwater should be contained, the area cleaned, and the contaminated material disposed as hazardous waste. A spill kit must be available onsite to clean any hydrocarbon or chemical spillages or leakages. A dedicated washing area/container, such as a plastic drum, must be available for the cleaning of equipment and/or machinery. The contaminated wash water must be disposed as hazardous waste. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	Incorrect management, storage and disposal of waste.	Possible surface- and/or groundwater pollution and/or contamination of stormwater runoff.	To prevent and minimise surface- and/or groundwater pollution and/or contamination of stormwater runoff.	<ul style="list-style-type: none"> Refuse bins/containers should be provided for domestic waste, such as food waste. Waste must be managed according to its hazard classification (general vs hazardous waste). General and hazardous waste streams must not be mixed. Waste generated during the decommissioning activities must be stored in designated areas and/or containers. Waste destined for re-use/re-cycling should be stored separately from waste destined for disposal to landfill. Waste may only be removed from site to adequately licensed waste management facilities for re-use, recycling or disposal, according to the Waste Type of each waste stream. No dumping of waste is permitted. Safe Disposal Certificates must be obtained for all waste that is disposed to landfill and these records must be kept on file by the applicant for a period of at least 5 years. Waste Manifest Documents must be obtained for all hazardous waste that is removed from the site and these records must be kept on file by the applicant for a period of at least 5 years. Littering shall not be permitted onsite. The City of Tshwane Waste Management By-Law must be adhered to. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the underground diesel tank linked to the Onderstepoort	Possible leakage of diesel from the underground diesel tank.	Possible groundwater pollution.	To prevent and minimise surface- and/or groundwater pollution from the underground diesel tank that is linked to the Onderstepoort incinerator.	<ul style="list-style-type: none"> The underground diesel tank is the property of TOTAL and is leased by the University of Pretoria. TOTAL will therefore be responsible for removal of the diesel tank that is connected to the Onderstepoort Incinerator. The applicant must request TOTAL to remove the diesel tank once this Waste Management Licence application process has been completed. The applicant must ensure that TOTAL determines whether the underground diesel tank has caused any contamination, should the tank perhaps have leaked diesel into the environment surrounding the tank. 	<ul style="list-style-type: none"> Applicant TOTAL

Activity	Aspect	Impact	Impact Management Outcomes (Objectives)	Impact Management Actions and Statements in order to avoid, modify, remedy, control or stop pollution or environmental degradation (mitigation measures)	Responsible party/parties
Incinerator (to be addressed by TOTAL when the underground diesel tank is removed by them).				<ul style="list-style-type: none"> The applicant must ensure that, should land contamination be present at the underground diesel tank, TOTAL contacts the National Department of Environment, Forestry and Fisheries Directorate: Land remediation to confirm whether a Remediation Order is required before remediation of the contamination can be commenced with. The applicant must ensure that, should a Remediation Order be required, TOTAL obtains the required Remediation Order, and that the required remediation of the contamination is completed by TOTAL. The applicant must ensure that TOTAL removes the diesel tank in its entirety subsequent to the above-listed matters having been addressed and that a final report is received from TOTAL confirming that any contamination has been completely remediated and that the diesel tank has been removed and decommissioned. 	
Social					
Dismantling and decommissioning of the Onderstepoort Incinerator.	Generation of noise and dust.	Possible nuisance to adjacent landowners.	To minimise the generation noise and dust.	<ul style="list-style-type: none"> Decommissioning activities that will generate the most dust should be limited to days with low wind speeds, as far as possible. Decommissioning activities that will generate the most noise should be limited to weekdays, as far as possible. Vehicles must not be left idling and machinery/equipment must not be left running unnecessarily. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	Increase in traffic to and from the site (demolition contractor vehicles travelling to and from the site).	Possible risk to road users.	To ensure that road users are not endangered as a result of the project.	<ul style="list-style-type: none"> All loads (demolished material) must be securely fastened before being transported off-site. Contractor vehicles must be roadworthy and adhere to tonnage limitations. 	<ul style="list-style-type: none"> Applicant Appointed Decommissioning Contractor
Dismantling and decommissioning of the Onderstepoort Incinerator.	Influx of contracted workers on site.	Possible increase in crime on site.	To ensure that the influx of workers does not result in an increase in crime at the site.	<ul style="list-style-type: none"> Access control will be implemented at the applicant's security station at the entrance to the Onderstepoort Complex. Formal appointment of the decommissioning contractor should be undertaken. 	<ul style="list-style-type: none"> Applicant

**10. A DESCRIPTION OF THE MANNER IN WHICH IT INTENDS TO
(I) MODIFY, REMEDY, CONTROL OR STOP ANY ACTION, ACTIVITY OR
PROCESS WHICH CAUSES POLLUTION OR ENVIRONMENTAL
DEGRADATION DURING CLOSURE;
(II) REMEDY THE CAUSE OF POLLUTION OR DEGRADATION AND
MIGRATION OF POLLUTANTS DURING CLOSURE;
(III) COMPLY WITH ANY PRESCRIBED ENVIRONMENTAL MANAGEMENT
STANDARDS OR PRACTICES; AND
(IV) COMPLY WITH ANY APPLICABLE PROVISIONS OF THE ACT
REGARDING CLOSURE**

(I) and (II) Refer to *Table 1* above for the relevant impact management actions that will be applied for the proposed project.

(III) The applicant must comply with the National Norms and Standards for the Storage of Waste (GN 926 of 29 November 2013), should these be applicable to their operations.

(IV) The provisions of NEMA, 1998, pertaining to closure are not applicable as the development does not include the prospecting, exploration or extraction of a mineral or petroleum resource.

**11. TIME PERIODS WITHIN WHICH THE MEASURES CONTEMPLATED
IN THE CLOSURE PLAN MUST BE IMPLEMENTED**

Planning and Design Phase

The measures must be implemented on a continual basis during the planning and design phase and must be completed before the decommissioning phase is initiated.

Pre-construction Phase

Not applicable.

Construction Phase

Not applicable.

Operational Phase

Not applicable.

Decommissioning and Post-Decommissioning Phases

The measures must be implemented on a continual basis during the decommissioning phase and must be completed within one month from the end of the decommissioning phase.

12. THE PROCESS FOR MANAGING ANY ENVIRONMENTAL DAMAGE, POLLUTION, PUMPING AND TREATMENT OF EXTRANEIOUS WATER OR ECOLOGICAL DEGRADATION AS A RESULT OF CLOSURE

Refer to *Table 1* above for the relevant impact management actions that will be applied for the proposed project.

13. DETAILS OF ALL PUBLIC PARTICIPATION PROCESSES CONDUCTED IN TERMS OF REGULATION 41 OF THE REGULATIONS

13.1 Copies of any representations and comments received from registered Interested and Affected Parties

Please refer to Appendix C of the Basic Assessment Report.

13.2 Summary of comments received from, and a summary of issues raised by registered interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments

Please refer to Appendix C of the Basic Assessment Report.

13.3 Minutes of any meetings held by the EAP with Interested and Affected Parties and other role players which record the views of the participants

No meetings have been held with Interested and Affected Parties.

13.4 Indication of the amendments made to the plan as a result of public participation processes conducted in terms of regulation 41 of these Regulations

No amendments have been made to this Closure Plan as a result of public participation processes conducted in terms of regulation 41 of these Regulations.

14. DETAILS OF ANY FINANCIAL PROVISION FOR THE REHABILITATION, CLOSURE AND ON-GOING POST DECOMMISSIONING MANAGEMENT OF NEGATIVE ENVIRONMENTAL IMPACTS

Financial provision for rehabilitation, closure and on-going post decommissioning management are not applicable as the proposed project does not include the prospecting, exploration or extraction of a mineral or petroleum resource.

ADDENDUM 1 – CV OF ENVIRONMENTAL ASSESSMENT PRACTITIONER

Curriculum Vitae Lizette Kloppers

PERSONAL DETAILS

Full Names	Lizette Kloppers (née Crous)
ID Number	8712010057083
Date of Birth	1 December 1987
Marital Status	Married
Home language	Afrikaans (Speak, read and write)
Other languages	English (Speak, read and write)
Nationality	South African
Gender	Female
Residential Address	1626 Barleria Crescent, Rietvlei Heights Country Estate, Doornkloof, 0157
Postal Address	PO Box 5419, Rietvalleirand, Pretoria, 0174
Contact Details	E-MAIL : lizette@earthnsky.co.za CELL : 061 524 2211

Professional Registrations	EAPASA: 2019/767 SACNASP: 115453
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QUALIFICATIONS AND TRAINING COURSES

Qualification	Institution	Year
BSc BIODIVERSITY AND ECOLOGY cum laude	UNIVERSITY OF STELLENBOSCH	2009
Postgraduate certificate in ENVIRONMENTAL MANAGEMENT (upgraded to MSc)	UNIVERSITY OF LONDON – EXTERNAL SYSTEM	2010
Certificate: Greening your Business (Nedbank and BusinessDay course)	NEDBANK	2011
Environmental Law for Environmental Managers	NORTH WEST UNIVERSITY - CENTRE FOR ENVIRONMENTAL MANAGEMENT	2013
MSc ENVIRONMENTAL MANAGEMENT with merit	UNIVERSITY OF LONDON – INTERNATIONAL PROGRAMMES	2014
An Introduction to Waste Classification in South Africa: Towards Implementation of the National Environmental Management Waste Act	NORTH WEST UNIVERSITY - CENTRE FOR ENVIRONMENTAL MANAGEMENT	2014
Resource Efficiency and Cleaner Production (RECP) Introductory Course	NATIONAL CLEANER PRODUCTION CENTRE (NCPC)	2015
ISO 14001:2015 Requirements	BSI SOUTH AFRICA	2016
Energy Management Systems (EnMS) End User Training	NATIONAL CLEANER PRODUCTION CENTRE (NCPC)	2016
GLOBALG.A.P. Public Farm Assurer Workshop – Crops (F&V)	GLOBALG.A.P. ACADEMY	2017
Energy Management 101	NATIONAL CLEANER PRODUCTION CENTRE (NCPC)	2017
Energy Performance Measurement Indicators (EnPI)	NATIONAL CLEANER PRODUCTION CENTRE (NCPC)	2020

WORK EXPERIENCE

Part time work performed is as follows.

- Student representative for Zoology 315 and Zoology 354.
- Research assistant – data collection for BScHons and PhD projects: during my BSc studies.
- Temporary Project Assistant; African Bank Limited: 13 April – 13 July 2010.

Full time work performed is as follows.

- Research assistant – data collection for a PhD project – 14 October – 9 November 2010.
- African Bank – administrative assistant; full-time and temporary contract – 3 Jan 2010 – 29 April 2011.
- Shangani Management Services – Senior Consultant – 3 May 2011 – 7 April 2016.

Current employment:

- EARTHnSKY Environmental – Director – 8 April 2016 – present.

Successful completion of more than 40 Environmental Authorisation applications (including Basic Environmental Impact Assessments, full Scoping and Environmental Impact Assessments, Waste Management Licence applications, Section 24G Rectification applications and Water Use Licence applications). These projects have been conducted for some of the leading agricultural and industrial companies in South Africa, such as AFGRI Operations Limited and DMS Powders.

REFERENCES

Name	Organisation/Institution	Telephone no.	Email address
1. Ruzelle Myburgh	DMS Powders	016 360 5319	Ruzelle.Myburgh@DMSPOWDERS.COM
2. Salome Beeslaar	BECS Services	072 191 6074	salome@becsenv.co.za
3. Cara Terblanche	SFP Townplanning	083 383 4137	cara.terblanche@sfplan.co.za
4. Lourens de Villiers	Labesh	082 789 6525	lourens@labesh.co.za
5. Charlotte Maphaha	Southern Proteins	013 665 1027	Charlotte.Maphaha@afgrifeeds.co.za