



**Unlawful Construction and Infilling of a Watercourse on the  
Remainder of Portion 274 of the Farm Tiegervoort 371 JR**

**Environmental Management Programme**

**GDARD Reference Number: S24G/03/22-23/0577**

March 2023

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# Unlawful Construction and Infilling of a Watercourse on the Remainder of Portion 274 of the Farm Tiegerpoort 371 JR

## Environmental Management Programme

March 2023

Project Ref: Tiegerpoort 371

Prepared by: Kirthi Peramaul



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### VERSION CONTROL

Alta van Dyk Environmental cc

Version: Draft

Approved by: Alta van Dyk

Signed: 

Position: Environmental Specialist

Date: March 2023

# Table of Contents

Table of Contents.....	ii
Abbreviations .....	iv
<b>1 Introduction and Background.....</b>	<b>1</b>
1.1 Introduction .....	1
1.2 Content of the Environmental Management Programme .....	1
<b>2 Environmental Assessment Practitioner.....</b>	<b>3</b>
2.1 Expertise of the Environmental Assessment Practitioner .....	3
<b>3 Project description .....</b>	<b>4</b>
3.1 Project Locality.....	4
3.2 Project background.....	4
3.3 Activity Description .....	6
3.3.1 Activities undertaken without Authorisation .....	6
3.3.2 Activities proposed as part of rehabilitation and continuation of construction activities .....	7
3.4 Environmental related permits required.....	9
3.5 Sensitive areas .....	11
<b>4 Roles and Responsibilities .....</b>	<b>13</b>
4.1 Applicant.....	13
4.2 Contractor.....	13
4.3 Environmental Control Officer .....	13
<b>5 Mitigation and/or Management Measures .....</b>	<b>14</b>
5.1 Pre-construction management measures.....	14
<b>6 Management Plans .....</b>	<b>20</b>
6.1 Palaeontological chance find procedure.....	20
6.2 Routine Maintenance Inspections and Repairs.....	21
<b>7 Environmental Monitoring .....</b>	<b>22</b>
<b>8 Environmental Awareness PLAN .....</b>	<b>23</b>
8.1 Environmental awareness training .....	23
8.2 Basic Rules of Conduct .....	23
<b>9 Compliance with the EMPr.....</b>	<b>25</b>

9.1	Site inspections .....	25
9.2	EMP Performance Assessment .....	25
9.3	Incident Reporting .....	25
9.4	Emergency Procedures.....	26
<b>10</b>	<b>Annexure A: EAP CV .....</b>	<b>27</b>
<b>11</b>	<b>Annexure B: Rehabilitation plan.....</b>	<b>28</b>
<b>12</b>	<b>Emergency Response Plan .....</b>	<b>29</b>

### *List of Tables*

Table 1-1:	Requirements of an EMPr.....	1
Table 2-1:	Details of the Environmental Assessment Practitioner & Environmental Control Officer .....	3
Table 3-1:	Infrastructure/Activity Dimension already constructed .....	7
Table 3-2:	Dimensions of infrastructure for the continuation of activities .....	8
Table 3-3:	Listed activities triggered by (NEMA EIA Regulations 2014 as amended) .....	9
Table 3-4:	NEM:WA Triggered Activities .....	11
Table 3-5:	List of Section 21 water uses to be applied for.....	11
Table 5-1:	Mitigation measures to be implemented during the construction phase.....	15
Table 5-2:	Mitigation measures to be implemented during the operational phase .....	19
Table 9-1:	Incident register.....	26

### *List of Figures*

Figure 3-1:	Locality Map .....	4
Figure 3-2:	Access road recommended by GAUTRANS (indicated with the blue broken line).....	5
Figure 3-3:	Google Earth Image (2019) showing the access points in relation to the site .....	5
Figure 3-4:	Google Earth Image (2021) showing the construction activities undertaken on site .....	6
Figure 3-5:	Environmental Sensitivity map.....	12

## ***Abbreviations***

EAP	Environmental Assessment Practitioner
EIR	Environmental Impact Report
ECO	Environmental Control Officer
EMPr	Environmental Management Programme
GDARD	Gauteng Department of Agriculture and Rural Development
NEMA	National Environmental Management
NWA	National Water Act
SAHRA	South African Heritage Resources Agency

# 1 INTRODUCTION AND BACKGROUND

An Environmental Management Programme (EMPr) is a site-specific plan developed to ensure that all necessary measures are identified and implemented in order to protect the environment and comply with environmental legislation.

A site-specific EMPr has been prepared for the management of all activities associated with the Unlawful Construction and Infilling of a Watercourse on the Remainder of Portion 274 of the Farm Tiegerpoort 371 JR as well as the rehabilitation activities. In order to confirm the likely environmental issues that may arise from the activities, the likely harm that these activities may pose on the surrounding environment and how these activities will be managed as to minimise any harm to the environment.

## 1.1 Introduction

An EMPr is a plan or programme that sets out guidelines that describe how activities that have or could have an adverse impact on the environment, will be mitigated, controlled, and monitored and subsequently achieve a required operational and/or end state.

The purpose of the EMPr is to provide for preventative, corrective and best practice measures to ensure that activities are undertaken in an environmentally responsible manner and that such activities are sustainable in the long term. The primary objectives of the EMPr, include, but are not limited to the following:

- Describe actions that when implemented will achieve mitigation of environmental impacts, or result in approved management of activities thereby reducing the probability of impacts occurring;
- Define organisational and administrative arrangements for environmental management and monitoring, including defining the responsibilities of staff and co-ordination, liaison and reporting procedures;
- Ensuring that discussions are held with the site supervision staff, regarding pro-active environmental management, such that potential problems can be identified and mitigation measures adopted prior to any work being carried out;
- Define the procedures to be followed as to ensure environmental control, in the event of pollution occurring that may require actions.

## 1.2 Content of the Environmental Management Programme

The EMPr has been structured in accordance with the requirements of the Directive issued to the Applicant on the 13<sup>th</sup> of October 2022.

**Table 1-1: Requirements of an EMPr**

No	Description	Reference
a)	The details of the person who prepared the EMPr	Chapter 2
b)	The expertise of the person who prepared the EMPr.	Chapter 2 Annexure A
c)	The name and contact details of the person or Environmental Control Officer ("ECO") responsible for the monitoring of compliance to the EMPr	Chapter 2
d)	Identification of all the possible environmental impacts that occurred during the construction of the activity and those that may occur during the operation of the activity	Chapter 5

No	Description	Reference
e)	Information on all mitigation measures undertaken, or that will be taken to address the environmental impacts that have been identified in the IR, including environmental impacts or objectives in respect of i) construction activities ii) operation or undertaking of the activity iii) rehabilitation plan of the environment iv) maintenance plan of the structures, infrastructures and sensitive areas on site v) closure	Chapter 5 Chapter 6
f)	Proposed mechanisms and frequency for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.	Chapter 9
g)	An Emergency Response Plan ("ERP")	Chapter 6

## 2 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Table 2-1 provides the details of the Environmental Assessment Practitioner (EAP).

**Table 2-1: Details of the Environmental Assessment Practitioner & Environmental Control Officer**

<b>Environmental Assessment Practitioner</b>	Kirthi Peramaul
<b>Company</b>	Alta van Dyk Environmental Consultants cc
<b>Qualifications</b>	BSc Hons Environmental Modelling and Monitoring
<b>Professional Registrations</b>	<ul style="list-style-type: none"><li>• South African Council for Natural Scientific Professions- Pr.Sci.Nat, Registration Number : 400012/18</li><li>• Environmental Assessment Practitioners Association of South Africa- Registered Environmental Assessment Practitioner: Number 2020/1537</li></ul>
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### 2.1 Expertise of the Environmental Assessment Practitioner

Kirthi Peramaul (BSc Hons Environmental Monitoring and Modelling, Pr.Sci.Nat, Registered EAP). Kirthi has 13 years' experience in the environmental management field and is currently registered with the South African Council of Natural Scientific Professions (SACNASP) as a Professional Natural Scientist (Registration No 400012/18: Environmental Science) and is as a Registered Environmental Assessment Practitioner with the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Registration No 2020/1537). Kirthi specialises in environmental authorisations, environmental compliance monitoring, environmental management plans, water use authorisation, stakeholder engagement, risk assessments and blue and green drop auditing. She has been involved in projects related to Waste Management, Linear Infrastructure, as well as Mixed-Use developments.

Refer to Annexure A for the curriculum vitae of the EAP.



### 3 PROJECT DESCRIPTION

#### 3.1 Project Locality

The project is situated on the Remainder of Portion 274 of the Farm Tiegerpoort 371-JR. The property is located on Graham Road, approximately 11km south east from the intersection of Graham Road and Solomon Mahlangu Drive, Tierpoort, within City of Tshwane Metropolitan Municipality (CoTMM). The centre coordinates of the site are 25°51'38.54"S: 28°24'45.39"E.

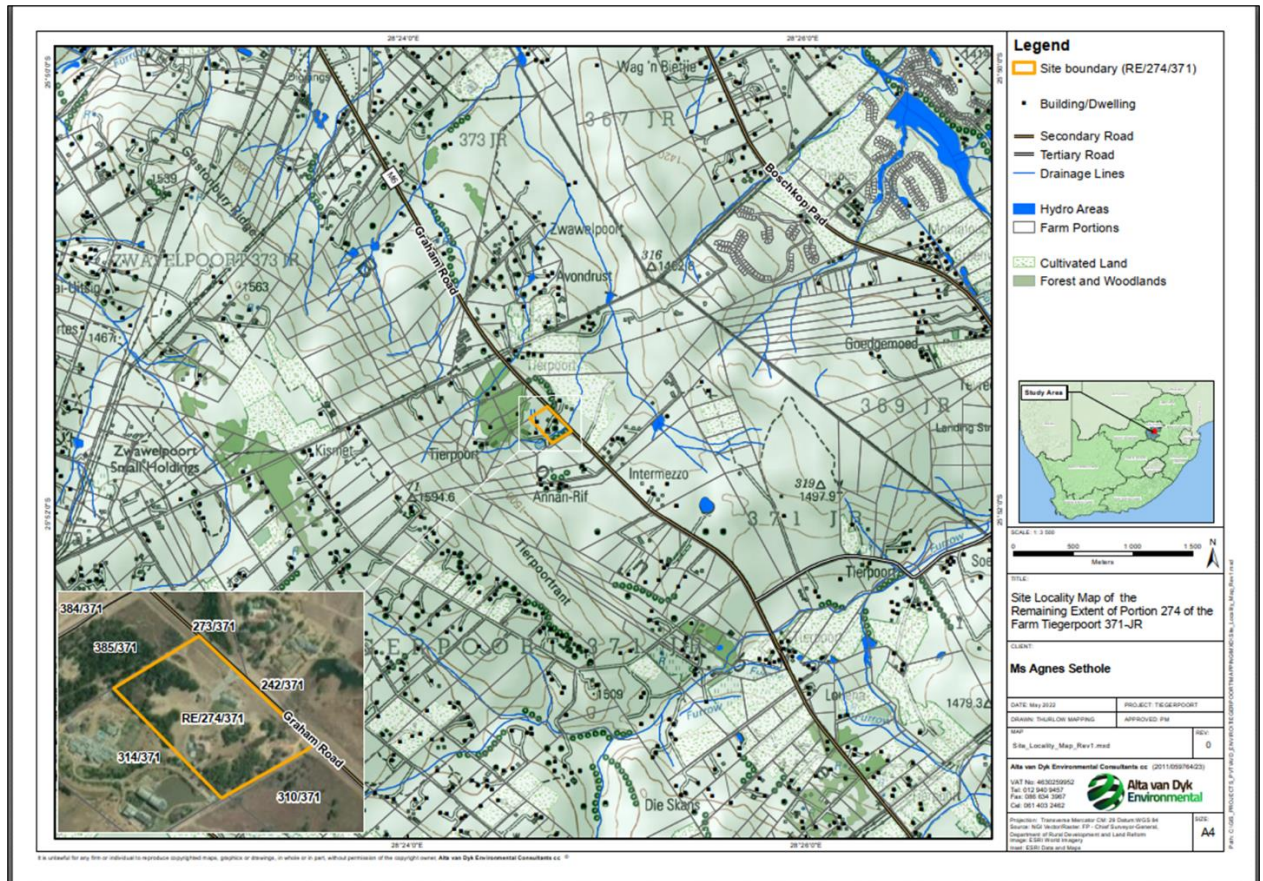
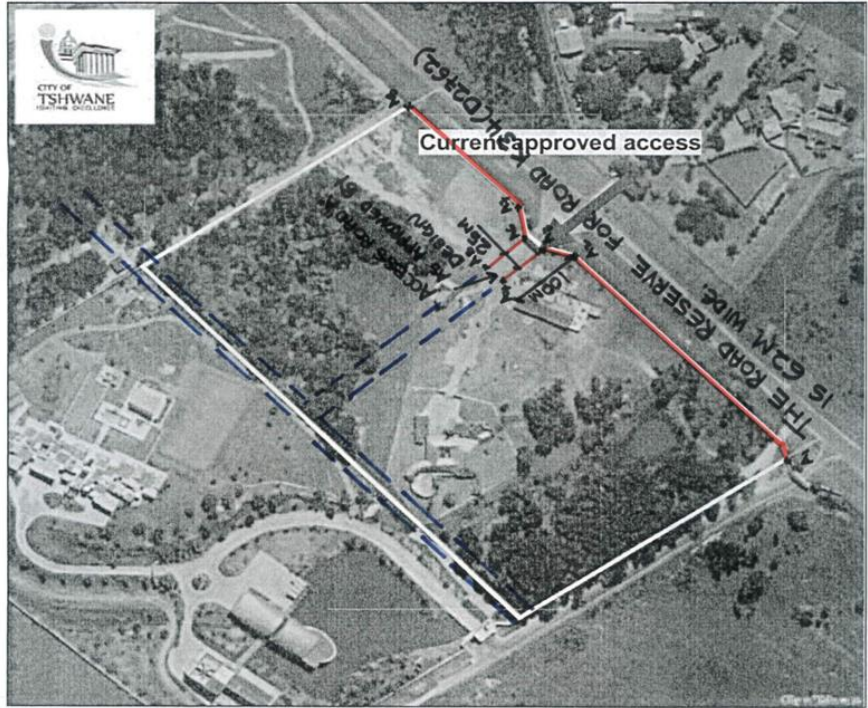


Figure 3-1: Locality Map

#### 3.2 Project background

The current consent of use for the property is for a “guesthouse” which was approved by the former Kungwini Local Municipality. It is however the intention of Ms Sethole to include certain land uses on the site to make provision for a wider convenient service to be provided at the facility. These include a conference centre, wedding chapel, staff quarters, and self-catering units. The aforementioned land uses do not fall under the definition of a guest house, hence Ms Sethole applied to the City of Tshwane for consent of a lodge in 2019. The application was submitted in terms of Clause 16 of the Tshwane Town-Planning scheme, 2008 (revised 2014) read with Section 16(3) of the City of Tshwane Land-Use Management By Law, 2016.

Approval in terms of the consent use application has not yet been obtained from the City of Tshwane (CoT). In February 2021, the Gauteng Department of Roads and Transport (Gautrans) as a Commentary Authority commented on the application with certain conditions and recommended the change in access point to the site. Two access points were recommended by GAUTRANS. The two access points are shown in **Figure 3-2** with the blue broken lines.



**Figure 3-2: Access road recommended by GAUTRANS (indicated with the blue broken line)**

Comments received from the CoT: Transportation Planning Division indicated that the current access point to the facility shall be relocated as it is not in line with the CoT Roads Master Plan (RMP). Currently access to the site is gained from the north eastern boundary off Graham Road. The CoT also advised that they are not in agreement with the comments provided by GAUTRANS and the CoT requested that access to the property should be gained from the right of way servitude that intersects with Graham Road.

This is the gravel road to the south east of the property. The new access road will join an existing road (developed prior to 1998). The existing road is a narrow width gravel road, approximately 4m wide which traversed the watercourse. (Figure 3-3 Error! Reference source not found.). In order to make use of the existing access road, access to the site will have to be via the south eastern boundary.



**Figure 3-3: Google Earth Image (2019) showing the access points in relation to the site**

### 3.3 Activity Description

#### 3.3.1 Activities undertaken without Authorisation

As the request for change in access was a formal response from the GAUTRANS and City of Tshwane, Ms Sethole was under the impression that she could commence with the construction activities on site without any further approvals. Construction activities on site commenced in June 2021 which included the following (Figure 3-4).

- Relocating the entry/exit point from Graham Road (north of the site) to the south east of the site (approximately 100m from Graham Road);
- The construction of an access road which joins the existing gravel road;
- Construction of a culvert within the watercourse;
- Paving of existing access road;
- Deposition and infilling with the watercourse with inert building rubble and soil stockpiled on site within a watercourse. The soil stockpiled on site was the soil excavated from the watercourse by the previous owner. Upon purchasing the property Ms Sethole found the soil stockpile on site.
- The disposal of inert waste on land (building rubble). Approximately 150m<sup>3</sup> of inert waste was stockpiled on site.

An attenuation dam previously existed along the watercourse, west of the existing water crossing. Ms Sethole has infilled the attenuation dam and constructed a second culvert with the intention to channelize the watercourse. The construction of a new culvert which serves as a new flow path (diversion) of the watercourse. In terms of the site topography, steeper slopes are located within the vicinity of the watercourse situated on site. Due to the steep slopes, extensive erosion is encountered on site, whereby the bank of the watercourse is extensively eroded. It was the intention of Ms Sethole to stabilise the banks of the watercourse by the infilling and compaction of waste/rubble material to achieve a levelled grassed area, hence the building rubble that has been disposed off on site.

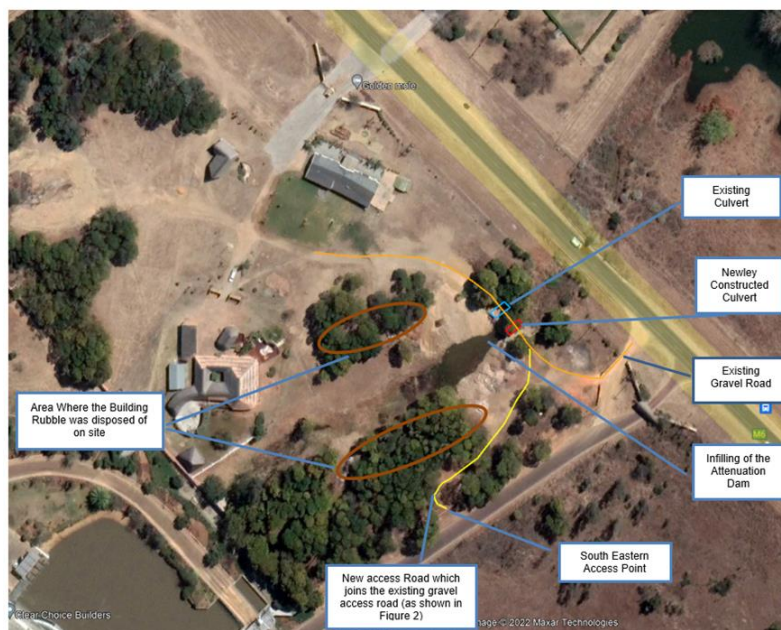


Figure 3-4: Google Earth Image (2021) showing the construction activities undertaken on site

The dimensions the activities undertaken on site are provided in **Table 3-1**.

**Table 3-1: Infrastructure/Activity Dimension already constructed**

Infrastructure/Activity	Dimension (Approximate)
Access road	Width of 6m 1m additional to include the pedestrian walkway. Length of 100m Approximately 200m of existing gravel road has been paved on site
Newly constructed Culvert	Length- 9.0m (pipe lengths 6.0m) Width – 1.8m Height – 1.95m
Inert waste stockpiled on site	150m <sup>3</sup>

### 3.3.2 Activities proposed as part of rehabilitation and continuation of construction activities

The following activities are required to be completed, pending the outcome of this application. These activities have been assessed as part the EIR and are recommendations from the specialist studies undertaken.

- Energy breakers are to be installed on the downstream side of the two culvert structures to reduce the impact of the water flow speed through the outlet structures and reducing erosion.
- Gabions are proposed to be installed upstream and downstream of the access road and culverts. The gabions will be constructed on top of a reno mattress. The gabions and reno mattress are simple gravity retaining structures which retains soil with its weight. The porosity of gabions prevents the pore-water pressure development behind the walls which, is one of the major advantages of these kinds of systems. These structures blend with the surroundings and allow vegetation to take roots through the structure which enhances the life of the structure and also result in a reduction of carbon foot prints.
- Riverbank slope re-shaping to prevent further erosion of the riverbanks. The slope re-shaping will be undertaken through the construction of a retaining wall e.g. gabions with reno mattress
- The boundary wall constructed south west of the site, allows for the flow of water through culverts situated beneath the wall. Due to the hydraulic action of the water, the watercourse bank and floor currently experiences erosion. Ms Sethole is therefore proposing to spread out the previously placed rocks at the south western boundary of the site (adjacent to the boundary wall), approximately 20m from the outlet structure to prevent further erosion. The rocks will be covered with reno mattresses. It is important to note that the boundary wall was constructed by the adjacent neighbour and not Ms Sethole.
- The road crossing the watercourse was incomplete at the time when construction activities ceased on site, hence Mr Sethole intends to complete the construction works by paving of the roadway and widening of the access road on the wingwalls of the culverts to allow for a pedestrian walkway.

The dimensions of the proposed activities are provided in **Table 3-2**.

**Table 3-2: Dimensions of infrastructure for the continuation of activities**

Infrastructure/Activity	Dimension
Gabions & Reno Mattress south of the watercourse	Width-4m wide Height-2m Length-124m
Gabions & Reno Mattress north of the watercourse	Width-4m wide Height-2m Length-136m
Rip rap & Reno Mattress downstream of the old culvert	Dump rock Length- 4m Width – 3.5 Reno mattress Length- 4m Width – 3.5
Rip rap & Reno Mattress downstream of the new culvert constructed by the applicant	Dump rock Length- 4m Width – 3.5 Reno mattress Length- 4m Width – 3.5
Gabions downstream of the access road on the riverbank	Length-26m Width-2.0m Height -2.5m
New area to be covered with Reno mattress (north of old culvert)	Length-2.3m Height -1.0m
Rocks at the boundary wall	2m X 6m Reno mattress to be used
Total area to be levelled out south of the watercourse	890m <sup>2</sup>
Total area to be levelled out north of the watercourse	830m <sup>2</sup>
Total size of the area applicable to this application	5700m <sup>2</sup>

### 3.4 Environmental related permits required

Triggered listed activities in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) 2014 Environmental Impact Assessment (EIA) Regulations (as amended in 2017) are shown in **Table 3-3**. Activities in Listing 1 and 3 are triggered by the development.

**Table 3-3: Listed activities triggered by (NEMA EIA Regulations 2014 as amended)**

Listed activity	Description of project activity that triggers listed activity
<p><b>Listing 1 Activity 19</b></p> <p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse</p>	<p>Construction of a culvert was undertaken within a watercourse. The attenuation dam within the watercourse and the area adjacent to the boundary wall was infilled with inert rubble.</p> <p><b>Rehabilitation</b></p> <p>The proposed rehabilitation activities includes the construction of energy dissipaters and gabions with reno mattress on the downstream side of the river crossing.</p>
<p><b>Listing 3 Activity 4</b></p> <p>The development of a road wider than 4 meters with a reserve of less than 13.5m.</p> <p>Gauteng:</p> <p>iv: Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plan</p> <p>v: Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)</p> <p>vi: Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority</p>	<p>According to information obtained from the South African National Biodiversity dataset, the study area falls within the Bronberg Mountain Bushveld which is characterized as a Critically Endangered Threatened Ecosystem in terms of the National List of Threatened Ecosystems (2009). The project also falls within an Ecological Support Area. In terms of the Gauteng EMF, the site falls with Zone 2: High Control Zone (within the urban development zone).</p> <p>A road of approximately 6m wide and 100m long has been constructed on site. Approximately 200m of existing gravel road has been paved on site. It is planned for the road to be extended by 1m to accommodate a pedestrian walkway</p>
<p><b>Listing 3 Activity 12</b></p> <p>The clearance of an area of more than 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>i Within any critically endangered or endangered ecosystem listed in terms of Section 52 of the NEMA or prior to the publication of such a list within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment;</p> <p>ii Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans</p>	<p>According to information obtained from the South African National Biodiversity dataset, the study area falls within the Bronberg Mountain Bushveld which is characterized as a Critically Endangered Threatened Ecosystem in terms of the National List of Threatened Ecosystems (2009). The project also falls within an Ecological Support Area.</p> <p>Clearance of vegetation has been undertaken in support of the access road.</p> <p><b>Rehabilitation</b></p> <p>Vegetation clearance will also be undertaken for rehabilitation activities such as slope stabilization and for the energy dissipaters.</p>
<p><b>Listing 3 Activity 14</b></p> <p>The development of-</p> <p>(ii) infrastructure or structures with a physical footprint of 10 square metres or more;</p> <p>where such development occurs-</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>Gauteng:</p>	<p>According to information obtained from the South African National Biodiversity dataset, the study area falls within the Bronberg Mountain Bushveld which is characterized as a Critically Endangered Threatened Ecosystem in terms of the National List of Threatened Ecosystems (2009). The project also falls within an Ecological Support Area.</p> <p>The construction of a road within 32m of the watercourse as well as the paving of the existing gravel road.</p> <p>The construction of a culvert within the watercourse.</p> <p><b>Rehabilitation</b></p>

Listed activity	Description of project activity that triggers listed activity
<p>iv: Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plan</p> <p>v: Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)</p> <p>vi: Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority</p>	<p>The proposed rehabilitation activities includes the construction of energy dissipaters and rip rap structures on the downstream side of the river crossing.</p>
<p><b>Listing 3 Activity 18</b></p> <p>The widening of a road by more than 4m, or the lengthening of a road by more than 1km.</p> <p>Gauteng:</p> <p>iv: Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plan</p> <p>v: Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)</p> <p>vi: Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority</p>	<p>The existing access road to be widened along the watercourse crossing to allow for traffic in both directions and a pedestrian walkway.</p>
<p><b>Listing 3 Activity 23</b></p> <p>The expansion of-</p> <p>(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs-</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>Gauteng:</p> <p>iv: Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plan</p> <p>v: Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)</p> <p>vi: Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority</p>	<p>The existing access road will be widened along the watercourse crossing to allow for traffic in both directions and a pedestrian walkway. The new culvert wing walls will be widened to accommodate a pedestrian sidewalk.</p>

Listed activities in terms of the National Environmental Management Waste Act (59 of 2008) will also be triggered. Details are provided in **Table 3-4**.

**Table 3-4: NEM:WA Triggered Activities**

Listed Activities in Terms of GN 921 of the NEMWA	Applicability
<p>Category A: Activity 9</p> <p>The disposal of inert waste to land in excess of 25 tons but not exceeding 25000 tons, excluding the disposal of such waste for the purposes of levelling and building which has been authorised by or other legislation.</p>	<p>Building rubble was disposed on site and used for the infill of the attenuation dam.</p> <p><i>Approximately 150<sup>3</sup> of material has been stockpiled on site.</i></p>

In addition, a Water Use Licence Application will be submitted in terms of the National Water Act (Act No. 36 of 1998) (NWA) as the following Section 21 water uses are triggered as shown in **Table 3-5**.

**Table 3-5: List of Section 21 water uses to be applied for**

Section 21 Water Use	Activities which require the Water Use Licence
<p>(c) – impeding or diverting the flow of water in a watercourse</p> <p>(i) – altering the bed, banks, course or characteristics of a watercourse</p>	<ul style="list-style-type: none"> <li>• Infilling of the watercourse</li> <li>• Construction of the culvert and roadway</li> <li>• Construction of gabions and Reno mattress</li> </ul>

### 3.5 Sensitive areas

The following sensitive features were identified in the project area:

- A riparian area was delineated and the 15m buffer
- The project area falls within the 1:50 and 1:100 floodline
- The project area falls within an Ecological Support Area

These sensitive areas in relation to the project area is provided in **Figure 3-5**.



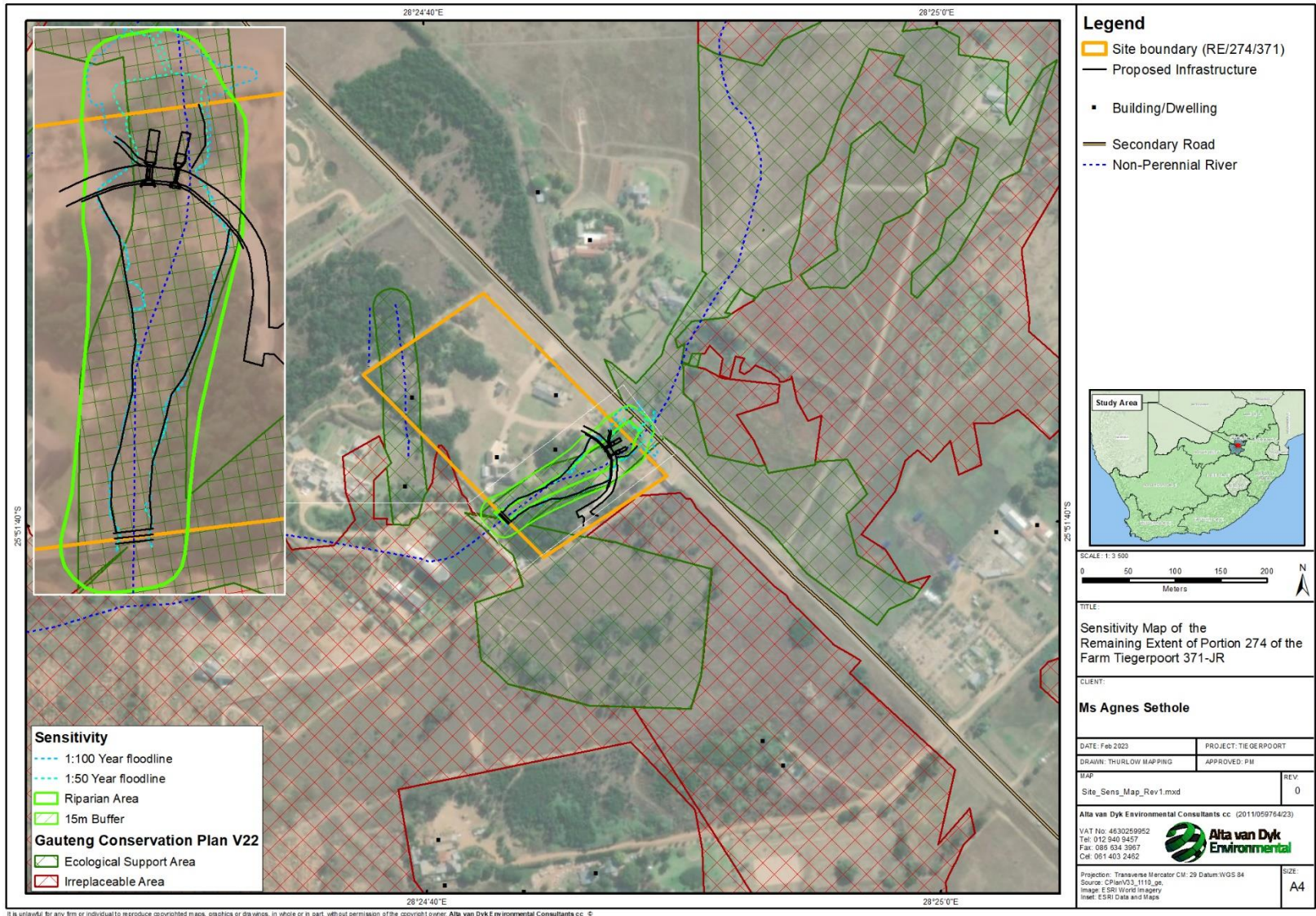


Figure 3-5: Environmental Sensitivity map

## **4 ROLES AND RESPONSIBILITIES**

The roles and responsibilities indicate which team member(s) are responsible for implementation of the identified mitigation measures, management plan and monitoring. The following parties will have roles and responsibilities in the implementation of this EMPr.

- Applicant (Ms Agnus Sethole);
- Contractor;
- Environmental Control Officer (ECO).

The roles and responsibilities of each party is described in the sections below.

### **4.1 Applicant**

Ms Agnus Sethole is the applicant and will therefore be the entity monitoring the implementation of the EMPr and compliance with the authorisation. The following roles and responsibilities are assigned to the applicant:

- Ensure compliance with the conditions in the EMPr and environmental authorisation during all phases of the project;
- Ensure that contractors and operators undertake to adhere to all the provisions of the EMPr;
- Ensure that environmental monitoring takes place;
- Ensure that independent environmental audits are undertaken;
- Ensure that all monitoring and audit reports are submitted to the competent authority.
- Appoint an ECO for the construction and rehabilitation phase

### **4.2 Contractor**

During the construction phase, the construction contractor will:

- Be responsible to have the EMPr available on site at all times;
- Ensure that all mitigation measures for which they are responsible, are implemented as described in this EMPr; and
- Ensure that all problems identified during environmental inspections, are addressed and rectified as soon as reasonably possible.

### **4.3 Environmental Control Officer**

The responsibilities of the ECO during all phases of the project are as follows:

- Inspections/audits of environmental protection requirements by employees and sub-contractors
- Assistance with the preparation of environmental monitoring reporting

## **5 MITIGATION AND/OR MANAGEMENT MEASURES**

### **5.1 Pre-construction management measures**

A variety of potential impacts are associated with the construction activities for this project. These impacts can be categorised as general construction related impacts as well as construction impacts specifically related to this site. General best practice rules to construction should be followed at all times. In addition to this the specific mitigation measures and recommendations as highlighted by the Environmental Impact Report and various specialists for this specific site is highlighted below.

Mitigation measures to be implemented during the construction and operational phases are presented in Table 5-1 and Table 5-2 respectively. As the project will be permanent, no mitigation for the closure phase have been included.

**Table 5-1: Mitigation measures to be implemented during the construction phase**

Component	Management Outcomes	Possible activity that may cause an impact	Potential Environmental Impact	Management Measure	Responsible Person	Frequency and/or time period	
Soils	Conservation of soils a resource	Clearance of vegetation for construction of the of the reno mattresses	Loss of soils due to erosion from cleared surfaces and compaction	• Vegetation clearing must be limited to as small an area as possible.	Construction Contractor	Throughout construction phase	
				• Topsoil should be stripped and stockpiled for use during rehabilitation of the site after construction is completed.	Construction Contractor	Once off	
				• Erosion and sedimentation in channels must be minimized through the effective stabilisation if required (gabions and Reno mattresses) and the re-vegetation of any disturbed banks	Construction Contractor	Throughout construction phase	
				• Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil.	Construction Contractor/Applicant	During rehabilitation of area after construction	
	Construction machinery and vehicles on site during the construction phase.	Contamination of soils resources due to construction activities	• The construction vehicles and machinery must make use of existing access routes as much as possible, before adjacent areas are considered for access.	Construction Contractor	Throughout construction phase		
			• The contractors used for the project should have spill kits available to ensure that any fuel or oil spills are cleaned-up and discarded correctly	Construction Contractor	Throughout construction phase		
• All machinery and equipment should be inspected regularly for faults and possible leaks, these should be serviced off-site;			Construction Contractor	Throughout construction phase			
Terrestrial Biodiversity	Limit the disturbance and destruction of vegetation and fauna habitat	Vegetation clearance for access road, reshaping of the embankments.	Loss of natural vegetation and Flora	• Clearing of vegetation should be limited to the project footprint area. No additional areas are allowed to be cleared beyond this footprint	Construction Contractor/Applicant	Throughout construction phase	
				• Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil	Construction Contractor	Throughout construction phase	
				• Relandscape to gentler gradients and re-vegetate all cleared areas as soon as possible to limit erosion potential. Sandbags and geotextiles should be used to assist until vegetation has established in these reworked areas	Construction Contractor/Applicant	During rehabilitation of area after construction	
				• All areas that have been significantly denuded of vegetation due to the construction of the culvert crossing, which includes the incised and excavated banks and adjacent eroded areas must be landscaped to gentle gradients and revegetated	Construction Contractor	Throughout construction phase	
				• Re-vegetation should follow landscaping activities with follow- up seeding taking place in bare/ exposed areas taking place over consecutive growing seasons for the life of the project	Construction Contractor/Applicant	During rehabilitation of area after construction	
				• No existing or emerging vegetation should be destroyed or damaged during this process and where plants are emerging sloping should be done in a controlled manner such as using a shovel	Construction Contractor	Throughout construction phase	
				Spread and/or establishment of alien and/or invasive species	• All alien invasive vegetation must be cleared and controlled on site.	Construction Contractor	Throughout construction phase
					• All vegetation cleared on site must be removed from site. Alien trees that are felled must have their stumps removed or treated with a suitable herbicide	Construction Contractor	Throughout construction phase
					• Cleared areas must be rehabilitated with indigenous vegetation.	Construction Contractor	During rehabilitation of area after construction
					• Alien vegetation management must take place in the established 15 m buffer zone and thereby allow for the natural succession of native riparian species. All identified alien invasive species are to be removed	Construction Contractor	Throughout construction phase
		Loss of faunal habitat due to the	• Construction impacts associated with the proposed project must be contained within the	Construction Contractor/Applicant	Throughout construction phase		

Component	Management Outcomes	Possible activity that may cause an impact	Potential Environmental Impact	Management Measure	Responsible Person	Frequency and/or time period
			disturbance within the riparian habitat	<ul style="list-style-type: none"> <li>footprint of the demarcated areas as indicated on the final approved project layout plan</li> <li>Construction impacts associated with the proposed project must be contained within the footprint of the demarcated areas as indicated on the final approved project layout plan</li> <li>Education of the construction staff about the value of wildlife and environmental sensitivity</li> <li>Intentional killing of any faunal species (in particular invertebrates and snakes) should be avoided by means of awareness programmes presented to the contractor.</li> <li>Any person found deliberately harassing any animal in any way should face disciplinary measures, following the possible dismissal from the site</li> </ul>	Construction Contractor/Applicant	Throughout construction phase
Surface Water (Riparian Area)	Minimise disturbance to the watercourse	Temporary Channel Diversion	Impeding the flow of water	<ul style="list-style-type: none"> <li>Alteration of the culverts must be undertaken during the low flow period to avoid the need for river diversions and associated impacts.</li> </ul>	Construction Contractor/Applicant	Once off – prior to commencement of construction phase
				<ul style="list-style-type: none"> <li>A qualified Environmental Control Officer (ECO) be appointed to oversee the project activities and ensure strict environmental practices and compliance is carried out to minimise environmental degradation</li> </ul>	Applicant	Throughout construction phase
		Increase in sediment inputs & turbidity	Vegetation removal	<ul style="list-style-type: none"> <li>Revegetating eroded areas with indigenous vegetation such as <i>Cynodon dactylon</i> (Kweek/couch grass) and/or <i>Melinis repens</i> (Natal redtop) for bare areas and steep road margins;</li> </ul>	Construction Contractor	During rehabilitation of area after construction
				<ul style="list-style-type: none"> <li>Adherence to the storm water management plan compiled for the site</li> </ul>	Construction Contractor/Applicant	Throughout construction phase
		Siltation of watercourse	Excavated streambed for culvert construction	<ul style="list-style-type: none"> <li>Silt traps and fences must be placed in the preferential flow paths to prevent sedimentation of the watercourse, these should be monitored and serviced regularly</li> </ul>	Construction Contractor	Throughout construction phase
		Erosion of watercourse	Removal of embankment vegetation areas Cutting/reshaping of embankments	<ul style="list-style-type: none"> <li>Revegetating eroded areas with indigenous vegetation such as <i>Cynodon dactylon</i> (Kweek/couch grass) and/or <i>Melinis repens</i> (Natal redtop) for bare areas and steep road margins</li> </ul>	Construction Contractor	During rehabilitation of area after construction
		Loss of embankments		<ul style="list-style-type: none"> <li>Flow dissipaters will need to be in place to prevent further erosion and damming below the culvert. Rip rap structure or large rocks from the dump upstream can also be placed here for dissipation</li> </ul>	Construction Contractor	Throughout construction phase
		Inundation of aquatic habitat	Potential temporary damming (inundation) of upstream of the culvert	<ul style="list-style-type: none"> <li>Inlets and outlets of the culvert must be positioned below the stream bed for the continuation of the streambed and natural movement of riverine substrates</li> </ul>	Construction Contractor	Throughout construction phase
		Alteration to flow volumes	Drainage patterns change due to crossing	<ul style="list-style-type: none"> <li>It is recommended that the material surrounding and holding the culverts in place should include a coarse rock layer that has been specifically incorporated to increase the porosity and permeability to accommodate flooding and high flows (to be confirmed with the design engineer, based on the flow and velocity calculations of the tributary as two culverts already exist to accommodate the high flows)</li> </ul>	Construction Contractor	Throughout construction phase
		Water quality impairment	Storage/leakage of chemicals, mixes and fuel	<ul style="list-style-type: none"> <li>All equipment, materials, waste material and litter should be removed from the site following construction.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>All chemicals stored outside the defined watercourse</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Carefully control all on-site operations that involve the use of cement and concrete.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Limit cement and concrete mixing to single sites where possible.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Use plastic trays or liners when mixing cement and concrete: Do not mix cement and concrete directly on the ground.</li> </ul>	Construction Contractor	Throughout construction phase

Component	Management Outcomes	Possible activity that may cause an impact	Potential Environmental Impact	Management Measure	Responsible Person	Frequency and/or time period
				<ul style="list-style-type: none"> <li>No mixing or storage of cement or concrete within the buffer of the watercourse</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>In the case of accidental spills or leaks from vehicles or machinery within the construction footprint absorbent materials used, and contaminated soil should be disposed of at a registered hazardous waste site.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>All hydrocarbons, such as diesel and oil, should be stored in a way that will allow any spillages to be easily and quickly isolated (e.g., stored on plastic sheeting or on impermeable bunded areas), and spills should be cleaned-up with approved absorbent materials</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>All dangerous goods must be stored in containers or buildings appropriate for the nature of the goods being stored and with the aim of preventing leakages or spillages to the environment.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>If spills or leaks are possible during storage or transport to and from the storage areas, appropriate secondary containment measures must be put in place to prevent any spills or leaks of hazardous materials from reaching the wetlands/watercourses</li> </ul>	Construction Contractor	Throughout construction phase
Heritage/ Palaeontological Resources	Protect and preserve heritage findings	Excavated streambed for culvert construction	Loss of fossil heritage	<ul style="list-style-type: none"> <li>If fossil remains are discovered during any phase of construction, either on the surface or exposed by excavations the Chance Find Protocol must be implemented by the ECO/site manager in charge of these developments</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Should fossils be unearthed the Contractor shall notify SAHRA</li> </ul>	Construction Contractor	Throughout construction phase
		Clearance of vegetation for construction of the of the Reno mattresses	Expose or damage features of heritage and cultural value beneath the surface	<ul style="list-style-type: none"> <li>Chance-find procedures must be implemented should any heritage resources be discovered.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were</li> </ul>	Construction Contractor	Throughout construction phase
Noise	Minimise the generation of noise	Noise generated from the construction vehicles and the construction activities	General rise in ambient noise levels	<ul style="list-style-type: none"> <li>Construction may only occur during the day.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>All machinery and equipment must be maintained in good working order.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>The Contractor shall take preventative measures where practical to minimize complaints regarding noise and vibration nuisance from sources.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>All equipment shall be turned off when not in use.</li> </ul>	Construction Contractor	As required
				<ul style="list-style-type: none"> <li>Assess and manage all noise complaints.</li> </ul>	Construction Contractor	As required
Air Quality	Minimise the generation of noise	Vehicular movement and disturbance associated with construction activities may lead to generation of duct and exhaust gases from construction vehicles working on site will compromise the ambient air quality.	Change in ambient air quality	<ul style="list-style-type: none"> <li>The construction site must be watered during the dry and windy conditions to control dust fallout</li> </ul>	Construction Contractor	As required
				<ul style="list-style-type: none"> <li>Dust production must be controlled by regular watering of access roads and working areas, should the need arise</li> </ul>	Construction Contractor	As required
				<ul style="list-style-type: none"> <li>Construction vehicles must adhere to low speeds to avoid the generation of dust on the construction site.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>All construction vehicles must be maintained to avoid adverse impacts on air quality as a result of a lack of maintenance.</li> </ul>	Construction Contractor	Throughout construction phase
Waste Management	Management of waste on site	The clearing of site will result in waste generation (vegetation). Building and domestic waste will be generated during the construction activities.	Increase waste generation due to construction activities	<ul style="list-style-type: none"> <li>Remove all waste, including cleared vegetation from site as soon as possible unless the material will be reused on site.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>A dedicated area for the placement of waste must be identified and demarcated.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Waste skips must be covered and emptied regularly. No overflowing to be allowed.</li> </ul>	Construction Contractor/Environmental Manager	Throughout construction phase

Component	Management Outcomes	Possible activity that may cause an impact	Potential Environmental Impact	Management Measure	Responsible Person	Frequency and/or time period
		Littering and improper waste management may attract vagrants				
Visual and Aesthetic Impacts	Minimise visual intrusion	Visual intrusion due to the stockpiling of building rubble on site	Change in visual character of the site	<ul style="list-style-type: none"> <li>Remove all waste, including cleared vegetation from site as soon as possible unless the material will be reused on site</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>A dedicated area for the placement of waste must be identified and demarcated.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Waste skips must be covered and emptied regularly. No overflowing to be allowed.</li> </ul>	Construction Contractor	Throughout construction phase
Traffic	Minimise impact on existing traffic flow in the area	Movement of construction and haulage vehicles	Increase in Traffic	<ul style="list-style-type: none"> <li>Construction vehicles are not to be parked on the roads thereby blocking the way to the neighbouring properties.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Ensure an appropriate access procedure to avoid backlog of traffic at the entry point to the site</li> </ul>	Construction Contractor	Throughout construction phase
Social	Maximise employment opportunities and social benefits	Construction activities	Benefits resulting from employment and income opportunities created by the construction activities	<ul style="list-style-type: none"> <li>Employ local works if qualified applicants with the appropriate skills are available.</li> </ul>	Construction Contractor	Throughout construction phase
				<ul style="list-style-type: none"> <li>Purchase goods and services at a local level if available.</li> </ul>	Construction Contractor	Throughout construction phase

**Table 5-2: Mitigation measures to be implemented during the operational phase**

Component	Management Outcomes	Possible activity that may cause an impact	Potential Environmental Impact	Management Measure	Responsible Person	Frequency and/or time period
Soils	Conservation of soils a resource	Failure of intervention leading to increased erosion	Large-scale failure of intervention, repair/rebuilding	• Ensure that reno mattress is properly maintained in order to minimize soil erosion.	Applicant	Monthly
				• Any damage must be repaired within 1 month of being noted.	Applicant	As required
Terrestrial Biodiversity	Limit the disturbance and destruction of vegetation and fauna habitat	Inspections, repair and maintenance of reno mattress and culverts	Disturbance and loss of biodiversity and habitat	• Vegetation should be allowed to establish within reno mattress and should not be removed.	Applicant	Monthly
			Establishment of alien and/or invasive species	• Alien/invasive vegetation must be cleared and destroyed immediately	Applicant	Monthly
				• Ensure that re-vegetation of cleared areas is established and free of alien/invasive species.	Applicant	Monthly
Surface water (Riparian Area)	Minimise disturbance to the watercourse	Alteration of surface drainage and runoff	Alteration to flow volumes (impediment)	• Inspections, repair and maintenance of reno mattress and culverts	Applicant	Inspections undertaken Every 6 months
			Alteration of patterns of flows (increased flood peaks and altered hydraulic processes)		Applicant	Inspections undertaken Every 6 months
		Foot traffic on bridge	Solid waste	• Place a sign stating "No littering of any kind" on both end of the crossing and regularly monitor and remove all solid waste in the watercourse.	Applicant	Once -off
			Impairment to water quality	• Placement of waste bins at the watercourse area	Applicant	Once -off
Social	Maximise employment opportunities and social benefits	Protection of infrastructure	Maintenance of reno mattress	• Ensure that the infrastructure is well-maintained in working order.	Applicant	As required



## 6 MANAGEMENT PLANS

The following management plans shall be followed as part of the construction and rehabilitation phases of the project:

- Rehabilitation Plan compiled by Alta van Dyk Environmental Consultants, provided in Appendix B of the EMPr
- Emergency Response Plan compiled by Alta van Dyk Environmental Consultants, provided in Appendix C of the EMPr
- Stormwater Management Plan compiled by Mr Pieter Eilken

The Palaeontological chance find procedure has been provided in the Section 6.1.

### 6.1 Palaeontological chance find procedure

Palaeontological heritage is unique and non-renewable and is protected by the NHRA and are the property of the State. It is thus the responsibility of the State to manage and conserve fossils on behalf of the citizens of South Africa. Palaeontological resources may not be excavated, broken, moved, or destroyed by any development without prior assessment and without a permit from the relevant heritage resources authority as per section 35 of the NHRA.

A fossil is the naturally preserved remains (or traces thereof) of plants or animals embedded in rock. These organisms lived millions of years ago. Fossils are extremely rare and irreplaceable. By studying fossils, it is possible to determine the environmental conditions that existed in a specific geographical area millions of years ago.

The chance find procedure is provided below:

- If a chance find is made the person responsible for the find must immediately **stop working** and all work that could impact that finding must cease in the immediate vicinity of the find.
- The person who made the find must immediately **report** the find to his/her direct supervisor which in turn must report the find to his/her manager and the ESO or site manager. The ESO or site manager must report the find to the relevant Heritage Agency (South African Heritage Research Agency, SAHRA). (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)). The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS co-ordinates.
- A preliminary report must be submitted to the Heritage Agency within **24 hours** of the find and must include the following: 1) date of the find; 2) a description of the discovery and a 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates.
- Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found.
- Upon receipt of the preliminary report, the Heritage Agency will inform the ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary.
- The site must be secured to protect it from any further damage. **No attempt** should be made to remove material from their environment. The exposed finds must be stabilized and covered by a

plastic sheet or sand bags. The Heritage agency will also be able to advise on the most suitable method of protection of the find.

- If the fossil cannot be stabilized the fossil may be collected with extreme care by the ESO. Fossils finds must be stored in tissue paper and in an appropriate box while due care must be taken to remove all fossil material from the rescue site.
- Once the Heritage Agency has issued the written authorization, the developer may continue with the development on the affected area

## **6.2 Routine Maintenance Inspections and Repairs**

The objective of routine maintenance is to safeguard the watercourse and management environmental impacts within the site boundary. The management actions are provided below that are required to be undertaken by the applicant.

- Areas where vegetation cover does not establish should be rehabilitated as soon as possible to avoid erosion.
- Keep the channel and culverts clear of obstructions and debris.
- Fallen trees and debris from storms must be removed from the system on a continual basis (after rain events)
- Routine inspections of infrastructure

## **7 ENVIRONMENTAL MONITORING**

A monitoring programme will be implemented for the duration of the construction phase. This programme will include (but is not limited to):

- Establishing a baseline through the taking of photographs of identified environmental aspects and potential impact on the area;
- Monitoring of the spread of alien invasive species around the site;
- Monitoring of stormwater management structures and the effectiveness thereof; and
- Ensuring that re-vegetation is taking place at rehabilitated construction areas.

## **8 ENVIRONMENTAL AWARENESS PLAN**

Environmental awareness is an essential part of the implementation of the EMPr during the construction and operational phases of the project. The purpose of environmental awareness is to make contractors and employees mindful of the environmental sensitivities around the site, the potential environmental impacts as well as the mitigation measures that need to be implemented.

### **8.1 Environmental awareness training**

Environmental awareness training must be implemented during the construction phase of the project. The ECO will be responsible for compiling the material required for the training, and should include, as a minimum, the following:

- Environmental legal requirements and obligations;
- Environmental sensitive areas;
- Heritage features and the associated chance find procedure should any archaeological finds be made;
- Details of the waste management procedures
- Emergency procedures;
- Relevant mitigation measures to be carried out as listed in the EMPr

All personnel, contractors to undergo environmental awareness training. A signed register of attendance must be kept for proof. Discussions are required on sensitive environmental receptors within the project area to inform contractors and site staff of the presence of protected species, their identification, conservation status and importance, biology, habitat requirements and management requirements the Environmental Authorisation and within the EMPr.

### **8.2 Basic Rules of Conduct**

The following list represents the basic Do's and Don'ts towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid. NOTE: ALL new site personnel must attend an environmental awareness/induction presentation.

#### **DO:**

- Clear your work areas of litter and building rubble at the end of each day – use the waste bins provided and prevent litter from being blown away by wind.
- Report all fuel or oil spills immediately and stop the spill from continuing.
- Dispose of cigarettes and matches carefully, so to prevent veld fires (arson and littering is an offence).
- Confine work and storage of equipment to within the immediate work area.
- Use all safety equipment and comply with all safety procedures.
- Ensure a working fire extinguisher is immediately at hand if any “HOT WORK” is undertaken e.g. welding, grinding, gas cutting etc.
- Prevent excessive dust and noise.

#### **DO NOT:**

- Do not litter - report dirty or full facilities, i.e. full dustbins and dirty or blocked chemical toilets.
- Do not make any fires.

- Do not enter any fenced off or demarcated areas.
- Do not allow waste, litter, oils or foreign materials into any storm water channels or drains or watercourses.
- Do not litter or leave food lying around.

## **9 COMPLIANCE WITH THE EMPR**

The implementation of the management measures specified in Table 5-1 and Table 5-2 will be monitored as detailed in the following sections.

### **9.1 Site inspections**

During the construction phase, the applicant must appoint a suitable qualified ECO to undertake visual site inspections supported by photographic evidence. The frequency of these visual site inspections must be monthly. A monthly compliance report to report on the compliance of the construction phase mitigation measures. The monthly site inspection reports should cover the following:

- routine observations of behaviours and practices;
- noting of unusual events, incidents and accidents (natural and human triggered);
- brief statement whether or not conditions of the EMPr are being met; and where it is reportable to authorities;
- possible reasons why conditions are not being met; and
- corrective action plans.

The report should be submitted to the applicant and construction contractor. Copies of the inspection reports should be kept on site.

It is recommended that photographs are taken of the site prior to, during and immediately after construction as a visual reference. These photographs should be stored with other records related to this EMPr. If captured in digital format, hard copies, in colour, must be kept with all other records relevant to the implementation of this EMP. Photographic reference of wetlands and relocation related aspects should be included.

### **9.2 EMP Performance Assessment**

During the construction phase and subsequent rehabilitation phase, monthly EMPr Performance Assessments as per the NEMA EIA Regulations must be undertaken by the independent Environmental Control Officer (ECO). These reports will be approved/signed-off by both the applicant and Construction Contractor. These reports must be submitted to the competent authority on a monthly basis.

Once rehabilitation is completed, a close-out EMP Performance Assessment will be undertaken to confirm that all required rehabilitation activities have been met prior to the contractor leaving site.

### **9.3 Incident Reporting**

An environmental incident is an unwanted event that has an actual or potential (near-hit) negative impact on the environment, affecting the quality of air, land or water, fauna or flora, and / or causing stakeholder concern. A causal link must be able to be made between an operational activity and the event. Environmental Incidents is monitored to establish the following:

- Which repeat incidents occur;
- Has the incident been investigated and the root cause been identified;
- Effectiveness of implementation of preventative and corrective actions; and
- To monitor trends to check the effectiveness of the mitigation measures.

**Table 9-1: Incident register**

Name of person reporting the incident	Information on the incident	Date of incident identified	Actions taken as to address the incident	Date of rectification	Signature

## 9.4 Emergency Procedures

The purpose of this procedure is to:

- document the mechanism by which potential emergency situations and accidents will be identified during the construction phase that can have an impact on the environment; and
- Provide guidelines on the response to actual emergency situations and accidents to prevent or mitigate associated environmental impacts that may occur.

An environmental emergency situation or accident is an unexpected, sudden occurrence with the potential to endanger people or seriously damage the environment, either immediately or with a delayed effect.

Potential emergencies shall be identified and response plans shall be developed for all identified emergencies. These include the following:

- how potential emergency situations and accidents will be identified;
- a guideline for developing emergency preparedness and response procedures, for use by sections on the mine to address section-specific emergencies, stating how to respond to potential emergencies that might have an impact on the environment;
- the process to be followed in the case where an emergency situation or accident occurs;
- when potential emergency situations or accidents and their associated procedures will be reviewed; and
- The frequency at which the procedures shall be tested.

## ***10 ANNEXURE A: EAP CV***



Name:	Kirthi	Surname	Peramaul
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## CURRICULUM VITAE

<b>Personal Information:</b>	Surname	<b>Peramaul</b>
	First names	<b>Kirthi</b>
	Date of birth	1985-02-24
	Gender	Female
	Nationality	RSA
<b>Contact Details:</b>	Telephone number (land line)	012 940 9457
	Cell Number	072 256 4733
	Email Address	Kirthi@avde.co.za
<b>Signature:</b>		<i>Peramaul</i>

### Expertise:

<b>Date November 2021 to present</b>	Area of expertise	Project management, environmental authorisations, stakeholder engagement, environmental compliance monitoring, environmental screening, water use licensing.
	Employers Name	<b>Alta van Dyk Environmental Consultants cc</b>
	Employer's locality and contact details	4 Garcia Peak Midlands Estate Centurion 1692 012 940 9457
	Main Activities and Responsibilities	Environmental Assessment Practitioner (EAP) Project Manager Project Planning Project Financing
<b>Date 24 May 2018 – 12 November 2021</b>	Area of expertise	Project management, environmental authorisations, stakeholder engagement, environmental compliance monitoring, environmental screening, water use licensing,
	Employers Name	<b>GA Environment (Pty) Ltd</b>
	Employer's locality and contact details	Hertford Office Park 90 Bekker Road Midrand 011 312 2537
	Main Activities and Responsibilities	Environmental Assessment Practitioner (EAP) Project Manager Project Planning Project Financing
<b>Date 2 May 2018 – 22 May 2018</b>	Area of expertise	Project management, Environmental auditing
	Employers Name	<b>Mamadi and Company</b>
	Employer's locality and contact details	84 Bekker Road Vorna Valley Midrand 011 532 8659
	Main Activities and Responsibilities	Environmental Assessment Practitioner (EAP) Project Manager
	Area of expertise	Environmental authorisations, stakeholder engagement, environmental compliance monitoring,

Name:	Kirthi	Surname	Peramaul
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<b>2 April 2012 – September 2017</b>		environmental screening, water use licensing, Blue and Green Drop Auditing
	Employers Name	<b>JG Afrika (Pty) Ltd</b>
	Employer's locality and contact details	Unit 37 Sunninghill Office Park Peltier Drive Sunninghill 011 231 2200
	Main Activities and Responsibilities	Scientist (Water and Environmental Management) Environmental Assessment practitioner
<b>2 April 2007 – March 2012</b>	Area of expertise	Blue and Green Drop auditing
	Employers Name	<b>Department of Water and Sanitation, National Office</b>
	Employer's locality and contact details	Francis Baard Street Pretoria Central
	Main Activities and Responsibilities	Blue and Green Drop auditing

### Years of professional experience

Years of experience as substantiated in the individual CV.

15 Years	Water and Environmental Fields
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### Qualifications:

<b>Qualification Awarded</b>	<b>BSc Honours Environmental Monitoring and Modelling</b>
Name of Institution	University of South Africa
Date awarded	2010
<b>Qualification Awarded</b>	<b>BSc Environmental Science</b>
Name of Institution	University of Kwa-Zulu Natal
Date awarded	2007

### Membership of Professional Bodies:

<b>Professional body</b>	<b>South African Council for Natural Scientific Professions (SACNASP)</b>
Details of membership	400012/18 Registered as a Professional Natural Scientist
Dates	January 2018 to present
<b>Professional body</b>	<b>Environmental Assessment Practitioners Association of South Africa</b>
Details of membership	2020/1537 Registered as an Environmental Assessment Practitioner
Dates	February 2022 to present

**Language skills:** one (1) for low to five (5) for high).

Language	Reading	Speaking	Writing
English	5	5	5
Afrikaans (Mother Tongue)	1	1	1

**Computing skills** - (1) for low to five (5) for high).

Name:	Kirthi	Surname	Peramaul
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Word	Excel	Power Point	Microsoft Projects
5	4	4	3

<b>Recent Project Experience: Environmental Authorisations &amp; Water Use Licenses</b>	
<b>Client</b>	<b>N'KOMATI ANTHRACITE (PTY) LTD</b>
Project	Water Use License Application and GN704 Motivation for the Block L Opencast Project
Responsibility	EAP, Compilation of WUL submission documentation
Year	Current (2022)
<b>Client</b>	<b>Anglo American Platinum: Rustenburg Platinum Mines</b>
Project	Regulation 31 Amendment Process to Correct the Heights of Waste Rock Disposal Facilities (W01, W07, RS3, East & West) at the Mogalakwena Mine Complex
Responsibility	Project Manager, EAP, Regulation 31 Report. Public Participation
Year	Current (2022)
<b>Client</b>	<b>Sibanye-Stillwater</b>
Project	Water Use License Application for the proposed Pandora Dam (Eastern Platinum Limited)
Responsibility	Project Manager, EAP, Compilation of WUL submission documentation, Management of Specialist, Public Participation
Year	Current (2022)
<b>Client</b>	<b>Ms Agnes Sethole</b>
Project	Section 24G application for the unlawful commencement of Listed Activities on the Remainder of Portion 274 of the Farm Tiergerpoort 371-JR
Responsibility	Project Manager, EAP, Public Participation, Coordination of Specialist Studies.
Year	Current (2022)
<b>Client</b>	<b>Sibanye-Stillwater</b>
Project	Basic Assessment & Water Use License process for the Meccano Pipelines
Responsibility	Environmental Scientist, project manager, Basic Assessment environmental authorisation process, including coordination of specialists and public participation
Year	2022
<b>Client</b>	<b>Sibanye Stillwater</b>
Project	Scoping & EIA and Water Use License for the use of UG2 Pit as a Return Water Dam
Responsibility	Environmental Scientist, project manager, Scoping and Environmental Impact Reporting environmental authorisation process, including

Name:	Kirthi	Surname	Peramaul
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<b>Recent Project Experience: Environmental Authorisations &amp; Water Use Licenses</b>	
	coordination of specialists and public participation
Year	Current (2022)
<b>Client</b>	<b>South African National Roads Agency</b>
Project	Scoping and EIA and Water use License for Quarry 6A in support of the Moloto Road Upgrade
Responsibility	EAP, project manager, Environmental authorisation, including coordination of specialist's studies
Year	2021
<b>Client</b>	<b>South African National Roads Agency</b>
Project	Scoping and EIA and Water Use License for Quarry 6B in support of the Moloto Road Upgrade
Responsibility	EAP, project manager, Environmental authorisation, including coordination of specialist's studies
Year	2021
<b>Client</b>	<b>South African National Roads Agency</b>
Project	Basic Assessment and Water Use License process for Quarry 4 in support of the Moloto Road Upgrade
Responsibility	EAP, project manager, including coordination of specialists and public participation
Year	2021
<b>Client</b>	<b>South African National Roads Agency</b>
Project	Basic Assessment and Water Use License process for Quarry 5 in support of the Moloto Road Upgrade
Responsibility	EAP, Project Manager, including coordination of specialists and public participation
Year	2021
<b>Client</b>	<b>South African Nuclear Energy Corporation</b>
Project	Scoping and EIA process for the nuclear waste pipe storage facility
Responsibility	EAP, project Manager, including coordination of specialists and public participation
Year	2020 - 2021
<b>Client</b>	<b>South African National Roads Agency</b>
Project	Basic Assessment and Water Use License process for the Construction of a 2.3km road from Stormvoel Road to Bavianspoort Road in Tshwane
Responsibility	EAP, project Manager, including coordination of specialists and public participation
Year	2019-2020
<b>Client</b>	<b>Gauteng Department of Human Settlements</b>

Name:	Kirthi	Surname	Peramaul
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<b>Recent Project Experience: Environmental Authorisations &amp; Water Use Licenses</b>	
Project	Scoping report for the Rietfontein Site in support of the Rapid Land Release Programme
Responsibility	EAP
Year	2020
<b>Client</b>	<b>City of Tshwane</b>
Project	Basic Assessment for the Menlyn Public Transport Facility at, Gobie Site
Responsibility	EAP
Year	2019 - 2020
<b>Client</b>	<b>Midvaal Local Municipality</b>
Project	Basic Assessment for the construction of a new pedestrian bridge across the existing Henley Weir, located in Henley-on Klip
Responsibility	EAP, public participation
Year	2013
<b>Client</b>	<b>AECOM</b>
Project	Basic Assessment and Water Use License Application Process for the proposed Thabong Interchange and Road Upgrade Project
Responsibility	Public Participation, WULA
Year	2015 - 2016
<b>Client</b>	<b>Eskom</b>
Project	Water Use License Application for the Harrismith-Munic Letsatsi 11kV powerline
Responsibility	EAP, WULA process
Year	2013
<b>Client</b>	<b>Eskom</b>
Project	Water Use License Application for the Harrismith-Munic 42nd Hill 11kV powerline
Responsibility	EAP, WULA process
Year	2014
<b>Client</b>	<b>Gauteng Department of Roads and Transport</b>
Project	Basic Assessment and Water Use Authorisation for the Proposed Extension of the K14 (R513) Provincial Road
Responsibility	EAP, Basic Assessment Report, WULA
Year	2016-2017
<b>Client</b>	<b>Eskom</b>
Project	Part 2 Amendment and Water Use License Application for the proposed Intabazwe Distribution Substation
Responsibility	EAP, EMPR, Part 2 Amendment Report
Year	2016
<b>Client</b>	<b>Midvaal Local Municipality</b>
Project	Mamello Bulk Sewer Project, Vaal Marina,

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<b>Recent Project Experience: Environmental Authorisations &amp; Water Use Licenses</b>	
Responsibility	EAP, Public Participation, EMPr, WULA technical report
Year	2014
<b>Client</b>	<b>Midvaal Local Municipality</b>
Project	Basic Assessment for the Proposed Extension of the Kookrus Cemetery
Responsibility	EAP, Compilation of the basic Assessment Report, Public Participation process
Year	2013-2014
<b>Client</b>	<b>Mangaung Local Municipality</b>
Project	Basic Assessment and WULA for the Integrated Public Transport Network Bus depot
Responsibility	Project leader, Review of the Basic Assessment Report
Year	2017-2018
<b>Client</b>	<b>Eskom</b>
Project	Part 2 Amendment for the Eskom Kriel Ash Disposal Facility
Responsibility	Project Leader, EAP, Public Participation, Part 2 amendment report
Year	2018
<b>Client</b>	<b>South African National Roads Agency</b>
Project	Water use License Application for the re-alignment of a sewer line in support of the Stormvoël to Bavianspoort Road
Responsibility	Project Leader, EAP, Compilation of the technical report.
Year	2020-2021
<b>Client</b>	<b>COEGA</b>
Project	Water Use License Wild Coast Special Economic zone
Responsibility	EAP, Public Participation
Year	2021
<b>Client</b>	<b>City of Tshwane Metropolitan Municipality</b>
Project	Water Use Authorisation Applications for Various City of Tshwane Roads and Stormwater Projects
Responsibility	EAP
Year	2017-2018
<b>Client</b>	<b>Sanitech</b>
Project	Water Use License Application for Sanitech's Wastewater Treatment Package Plant
Responsibility	EAP, Water Use License Technical Report
Year	2016

<b>Recent Project Experience: Environmental Auditing, &amp; EMPr</b>	
<b>Client</b>	<b>COEGA Development Corporation</b>

Name:	Kirthi	Surname	Peramaul
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<b>Recent Project Experience: Environmental Auditing, &amp; EMPr</b>	
Project	EMPr for Universal Access infrastructure for the Blyde River Canyon Nature Reserve
Responsibility	EAP, EMP
Year	2018
<b>Client</b>	<b>Midvaal Local Municipality</b>
Project	Environmental Management Plan for the proposed Mamello Bulk Water Project
Responsibility	EAP
Year	2014
<b>Client</b>	<b>Ekurhuleni Metropolitan Municipality.</b>
Project	Environmental Control Monitoring and Auditing for the Vosloorus Housing Development
Responsibility	Project leader, ECO
Year	2018-2020
<b>Client</b>	<b>Public Investment Corporation</b>
Project	Environmental Control Monitoring and Auditing for the Thlabane Mixed Use Development
Responsibility	Project leader, ECO
Year	2018-2021
<b>Client</b>	<b>COEGA Development Corporation</b>
Project	Wild Coast Special Economic Zone
Responsibility	ECO
Year	2021
<b>Client</b>	<b>Pikitup</b>
Project	Waste Management License Audits for Pikitup Landfill sites
Responsibility	External auditor, compilation of audit report
Year	2016
<b>Client</b>	<b>Ekurhuleni Water Care Company</b>
Project	Water Use License Audits at 13 of East Rand Water Care Company (ERWAT) Wastewater Treatment Works
Responsibility	External auditor, compilation of the audit report
Year	2014-2015
<b>Client</b>	<b>Department of Water and Sanitation</b>
Project	Green Drop Inspector for the 2012/2013 Green Drop cycle
Responsibility	Inspector, onsite audits, compilation of scorecards
Year	2012-2013
<b>Client</b>	<b>Department of Water and Sanitation</b>
Project	Blue Drop Inspector for the 2013/2014 Cycle.
Responsibility	Inspector, onsite audits, compilation of scorecards
Year	2013-2014
<b>Client</b>	<b>Department of Water and Sanitation</b>

Name:	Kirthi	Surname	Peramaul
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<b>Recent Project Experience: Environmental Auditing, &amp; EMPr</b>	
Project	Involved in the 2009, 2010 and 2011 publication of the Blue/Green Drop reports and the 2010 host city report
Responsibility	Inspector, Microbial and Chemical analysis summary sheets, Blue Drop System Training
Year	2009-2011
<b>Client</b>	<b>Nketoana Local Municipality</b>
Project	Green Drop Support for Nketoana LM
Responsibility	Project leader, Compilation of the Wastewater Risk Abatement Plan, Compilation of the Green Drop Improvement Plan, Compilation of the Green Drop File for the Green Drop assessments
Year	2013
<b>Client</b>	<b>Industrial Development Corporation</b>
Project	Green Drop Action Plans for the Industrial Development Corporation
Responsibility	EAP, Compilation of Green Drop Improvement Plans
Year	2013-2014
<b>Client</b>	<b>Eskom</b>
Project	Blue and Green Drop Support for Eskom Tutuka Power Station
Responsibility	EAP, Compilation of a Water Safety Plan (Risk Assessment), Wastewater Risk Abatement Plan (Risk Assessments)
Year	2015-2016

<b>Recent Project Experience: Environmental Screening &amp; Feasibility Studies</b>	
<b>Client</b>	<b>City of Tshwane Metropolitan Municipality</b>
Project	Status Quo Assessment for the Rooiwal Wastewater Treatment Works
Responsibility	EAP, Compilation of the due diligence report
Year	2017
<b>Client</b>	<b>Mangaung Metropolitan Municipality</b>
Project	Propulsion Study for the Integrated Public Transport Network
Responsibility	EAP, compilation of the propulsion study report
Year	2017
<b>Client</b>	<b>Gauteng Department of Human Settlements</b>
Project	Environmental Screening Assessments in support of the Rapid Land Release
Responsibility	EAP, compilation of screening reports
Year	2019/2021
<b>Client</b>	<b>Shell SA</b>



Name:	Kirthi	Surname	Peramaul
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<b>Recent Project Experience: Environmental Screening &amp; Feasibility Studies</b>	
Project	Environmental Trigger Analysis Assessment for Shell Ultra City (Polokwane, South City, Musina).
Responsibility	EAP, WWTW audit
Year	2018
<b>Client</b>	<b>Mangaung Metropolitan Municipality</b>
Project	Environment & Sustainability Work Stream
Responsibility	Project leader, Permitting
Year	2018-2021
<b>Client</b>	<b>Mangaung Metropolitan Municipality</b>
Project	Environmental Screening for the Integrated Public Transport network
Responsibility	Project leader, compilation of the screening reports
Year	2019

<b>Recent Project Experience: Integrated Water and Waste Management Plans (IWWMP)</b>	
<b>Client</b>	<b>Sibanye-Stillwater</b>
Project	2022 Update of the Marikana Operations (Eastern Platinum Limited and Western Platinum Limited) IWWMP
Responsibility	Compilation of the IWWMP
Year	2022
<b>Client</b>	<b>Anglo American Platinum</b>
Project	2021 Update of the Anglo-American Platinum Amandebult Complex IWWMP
Responsibility	Compilation of the IWWMP
Year	2021

## ***11 ANNEXURE B: REHABILITATION PLAN***



## **Unlawful Construction and Infilling of a Watercourse on the Remainder of Portion 274 of the Farm Tiegerpoort 371 JR**

### **Rehabilitation Plan**

March 2023

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# Unlawful Construction and Infilling of a Watercourse on the Remainder of Portion 274 of the Farm Tiegerpoort 371 JR

## Rehabilitation Plan

March 2023

AVDE Project Ref: Tiegerpoort 371

Prepared by: Tyla Leigh Smith & Kirthi Peramaul



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The opinions expressed in this Report have been based on the information supplied to Alta van Dyk Environmental Consultants cc (AvDEnvironmental) by company officials. The opinions in this Report are provided in response to a specific request from company officials to do so. AvDEnvironmental has exercised all due care in reviewing the supplied information. Whilst AvDEnvironmental has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. AvDEnvironmental does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this report apply to the site conditions and features as they existed at the time of AvDEnvironmental's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which AvDEnvironmental had no prior knowledge nor had the opportunity to evaluate.

### VERSION CONTROL

Alta van Dyk Environmental cc

Version: Final

Approved by: Alta van Dyk

Signed:

A handwritten signature in black ink, appearing to read "Kirthi Peramaul", is written over a light blue horizontal line.

Position: Environmental Specialist

Date: March 2023

## *Table of Contents*

<b>1</b>	<b>Introduction and Background</b>	<b>1</b>
1.1	<i>Background</i>	1
1.2	<i>Locality</i>	1
1.3	<i>Aim and objectives</i>	2
1.4	<i>Legislation</i>	2
<b>2</b>	<b>Project Description</b>	<b>2</b>
2.1	<i>Project Overview</i>	2
2.2	<i>Activity description</i>	3
<b>3</b>	<b>Riparian vegetation delineation</b>	<b>7</b>
<b>4</b>	<b>Environmental Sensitivity</b>	<b>10</b>
<b>5</b>	<b>Rehabilitation Plan</b>	<b>12</b>
5.1	<i>Rehabilitation Actions</i>	12
5.2	<i>Re-Vegetation</i>	13
5.3	<i>Time of planting</i>	13
5.4	<i>Removal and Control of Alien Invasive Flora</i>	13
5.5	<i>Erosion Control</i>	13
5.6	<i>Shaping</i>	14
5.7	<i>Trimming</i>	14
5.8	<i>Preparation of areas for grassing</i>	14
5.9	<i>Soiling and seeding to follow earthworks</i>	15
<b>6</b>	<b>Conclusion</b>	<b>16</b>
<b>8</b>	<b>References</b>	<b>18</b>

## *List of Tables*

Table 1:1	Project location details .....	2
Table 1:2	Property Description.....	2
Table 4:1	Rehabilitation actions for the project.....	12

## *List of Figures*

Figure 1-1	Locality Map (Thurlow Mapping, 2022)	1
Figure 2-1	Access road recommended by Gautrans (indicated with the blue broken line)	2
Figure 2-2	Google Earth Image (2019) showing the access points in relation to the site	3
Figure 2-3	Google Earth Image (2021) showing the construction activities undertaken on site	4
Figure 2-4:	Site Layout	6
Figure 3-1:	Plant species dominating the riparian area (may 2022) (TBC, 2022)	7
Figure 3-2:	The right river bank facing upstream (May 2022) (TBC, 2022)	8
Figure 3-3:	The left riverbank facing upstream (May 2022) (TBC, 2022)	8
Figure 3-4:	Riparian delineation for the associated tributary of the Pienaars River. Red=Highly sensitive area, Orange=Moderately sensitive area (TBC, 2022)	9
Figure 4-1:	Environmental Sensitivity Map	11

## ***ABBREVIATIONS***

AIS	Alien and Invasive Species
AvDE	Alta van Dyn Environmental Consultants cc
CBA	Critical Biodiversity Area
CoT	City of Tshwane
CoTMM	City of Tshwane Metropolitan Municipality
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EI	Ecological Importance
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Areas
Gautrans	Gauteng Department of Roads and Transport
GDARD	Gauteng Department of Agricultural and Rural Development
NEM:BA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act (Act No. 59 of 2008)
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act (Act No. 36 of 1998)
ONA	Other Natural Areas
PES	Present Ecological State
RMP	Roads master Plan
SQR	Sub-Quaternary Reach
TBC	The Biodiversity Company

# **1 INTRODUCTION AND BACKGROUND**

## **1.1 Background**

In June 2021, Ms Sethole commenced with activities listed in terms of National Environmental Management Act (Act 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations 2014 (as amended) and National Environmental Management Waste Act (Act 59 of 2008) (NEM:WA), 2008, Government Notice (GN) Regulation 921 of 2013 within a watercourse without obtaining Environmental Authorisation (EA) from the relevant Competent Authority, the Gauteng Department of Agriculture and Rural Development (GDARD). Realising the contravention, Ms Sethole has voluntarily decided to undertake a Section 24G application process and construction activities on site have ceased.

A Directive in terms of Section 24G (1) of the NEMA, as amended, was issued to Ms Sethole by the GDARD on the 13 October 2022, Ref: S24G/03/22-23/0577. for the following unlawful activities:

- The unlawful construction of a culvert within a watercourse,
- The widening of an existing access road, deposition and infilling with inert rubble and excavations within a watercourse,
- The disposal of inert waste on land (building rubble).

Alta van Dyk Environmental Consultants (AvDE) was appointed by Sethole as the independent Environmental Assessment Practitioner (EAP) to undertake the Section 24G application process.

## **1.2 Locality**

The project is situated on the Remainder of Portion 274 of the Farm Tiegerpoort 371-JR. The property is located on Graham Road, approximately 11km south east from the intersection of Graham Road and Solomon Mahlangu Drive, Tierpoort, within City of Tshwane Metropolitan Municipality (CoTMM). Further information can be found within **Table 1:1** and **Table 1:2** below. Refer to



Figure 1-1 for the locality map.

**Table 1:1 Project location details**

Site specific details	Description
Municipal jurisdiction	City of Tshwane Metropolitan Municipality
Ward number	Ward 102
Nearest town	Pretoria
Site Centre Coordinates	25°51'38.54"S: 28°24'45.39"E.

**Table 1:2 Property Description**

Farm Name	Farm Tiegerpoort 371-JR
Portion	274
Registered Landowner	Ms Agnus Sethole
SG21 number	T0JR0000000037100000

### 1.3 Aim and objectives

The objective of this document is to ensure that areas affected by the unlawful construction and infilling activities are rehabilitated sufficiently as to stabilise banks, revegetate cleared areas, and rehabilitate instream areas that have been modified. Furthermore, should the activity continue within the affected area, best practice methodologies should be implemented to minimise risk to the tributary. Ultimately, the rehabilitation after construction is completed will ensure the ecological status of the area remains intact.

### 1.4 Legislation

The relevant legislative requirements include the necessary environmental and water use authorisations and other licences in terms of the following national environmental and water statutes and the applicable regulations:

- The National Environmental Management Act (Act No. 107 of 1998) (NEMA) (as amended) and the associated Environmental Impact Assessment (EIA) Regulations;
- The National Environmental: Waste Act (Act No. 59 of 2008) (NEM:WA)
- The National Forests Act (Act No. 84 of 1998); and
- The National Water Act (Act No. 36 of 1998) (NWA).

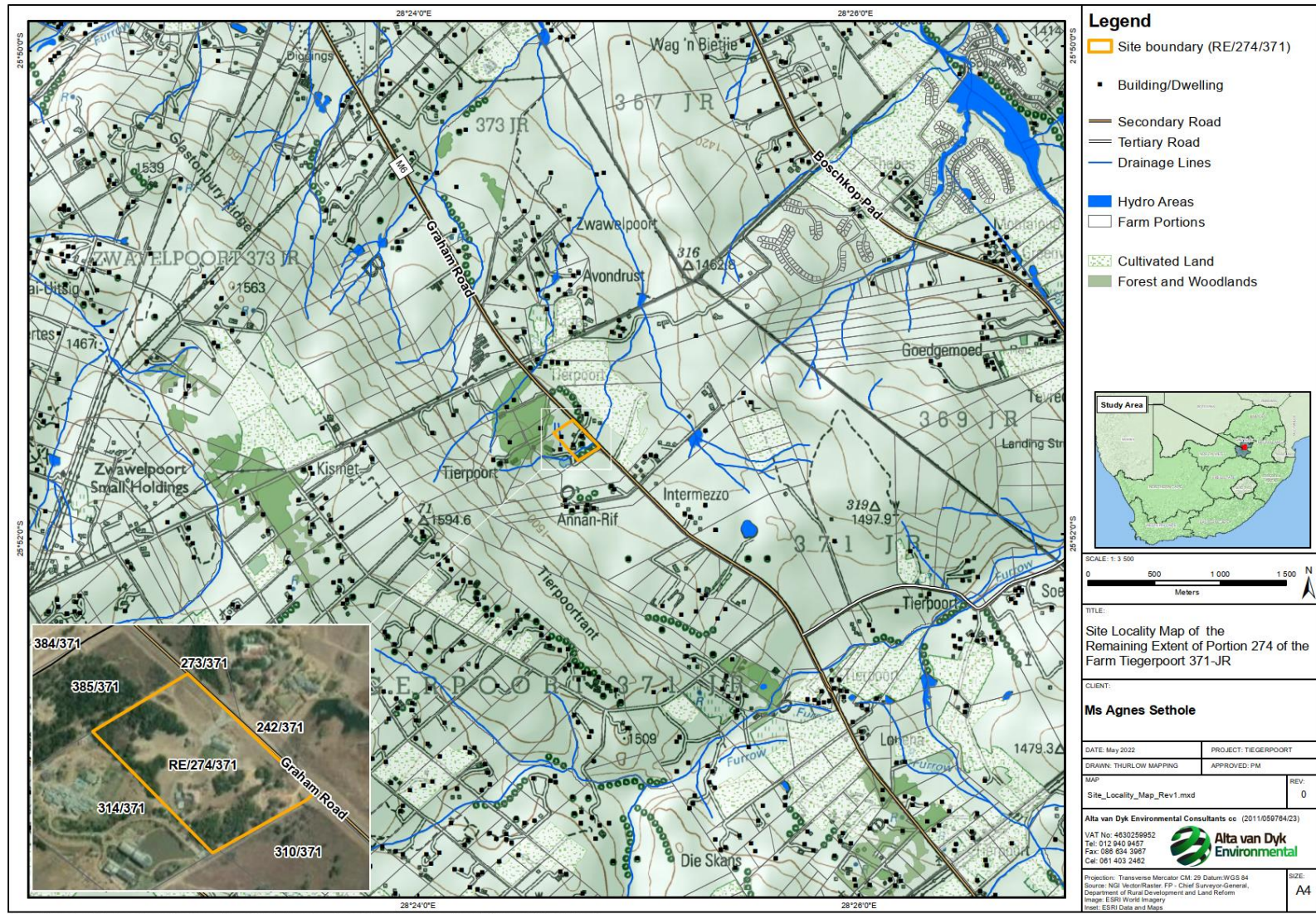


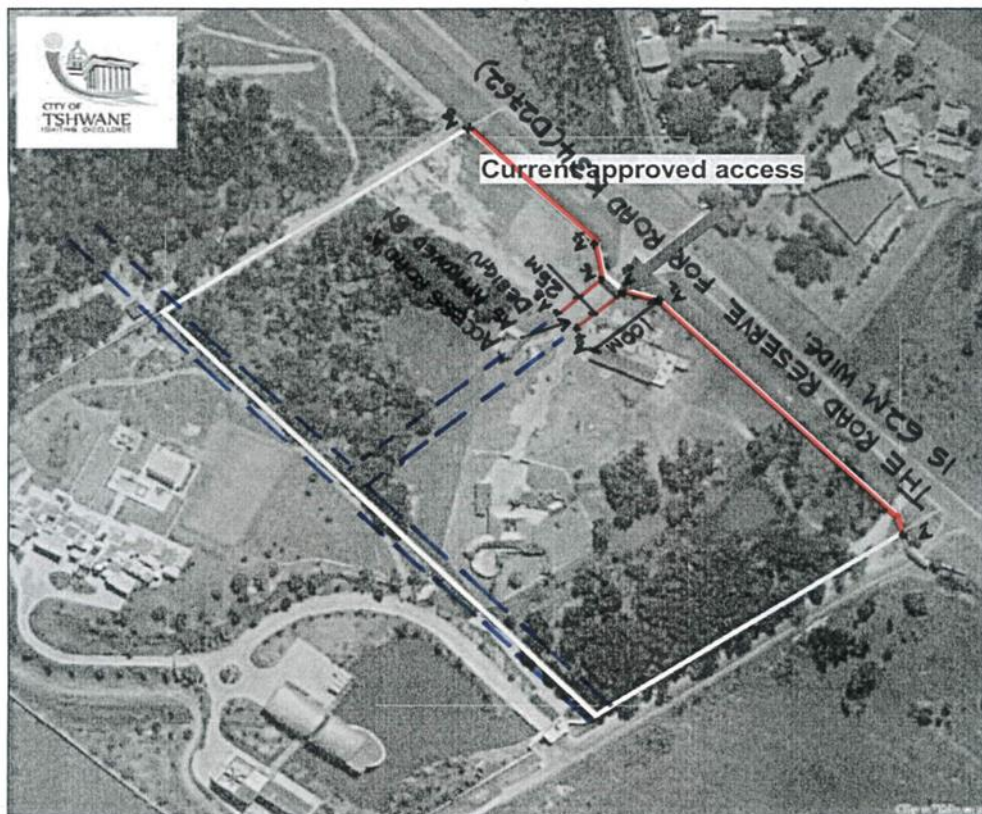
Figure 1-1 Locality Map (Thurlow Mapping, 2022)

## 2 PROJECT DESCRIPTION

### 2.1 Project Overview

The current consent of use for the property is for a “guesthouse” which was approved by the former Kungwini Local Municipality. It is however the intention of Ms Sethole to include certain land uses on the site to make provision for a wider convenient service to be provided at the facility. These include a conference center, wedding chapel, staff quarters, and self-catering units. The aforementioned land uses do not fall under the definition of a guest house, hence Ms Sethole applied to the City of Tshwane (CoT) for consent of a lodge in 2019.

Approval in terms of the consent use application has not yet been obtained from the CoT. In February 2021, the Gauteng Department of Roads and Transport (Gautrans) as a Commentary Authority commented on the application with certain conditions and recommended the change in access point to the site. Two access points were recommended by Gautrans. The two access points are shown in **Figure 2-1** with the blue broken lines.



**Figure 2-1** Access road recommended by Gautrans (indicated with the blue broken line)

Comments received from the CoT: Transportation Planning Division indicated that the current access point to the facility shall be relocated as it is not in line with the CoT Roads Master Plan (RMP). Currently access to the site is gained from the north eastern boundary off Graham Road. The CoT also advised that they are not in agreement with the comments provided by Gautrans and the CoT requested that access to the property should be gained from the right of way servitude that intersects with Graham Road.

This is the gravel road to the south east of the property. The new access road will join an existing road (developed prior to 1998). The existing road is a narrow width gravel road, approximately 4m wide which traversed the watercourse (**Figure 2-2**). In order to make use of the existing access road, access to the site will have to be via the south eastern boundary.



**Figure 2-2 Google Earth Image (2019) showing the access points in relation to the site**

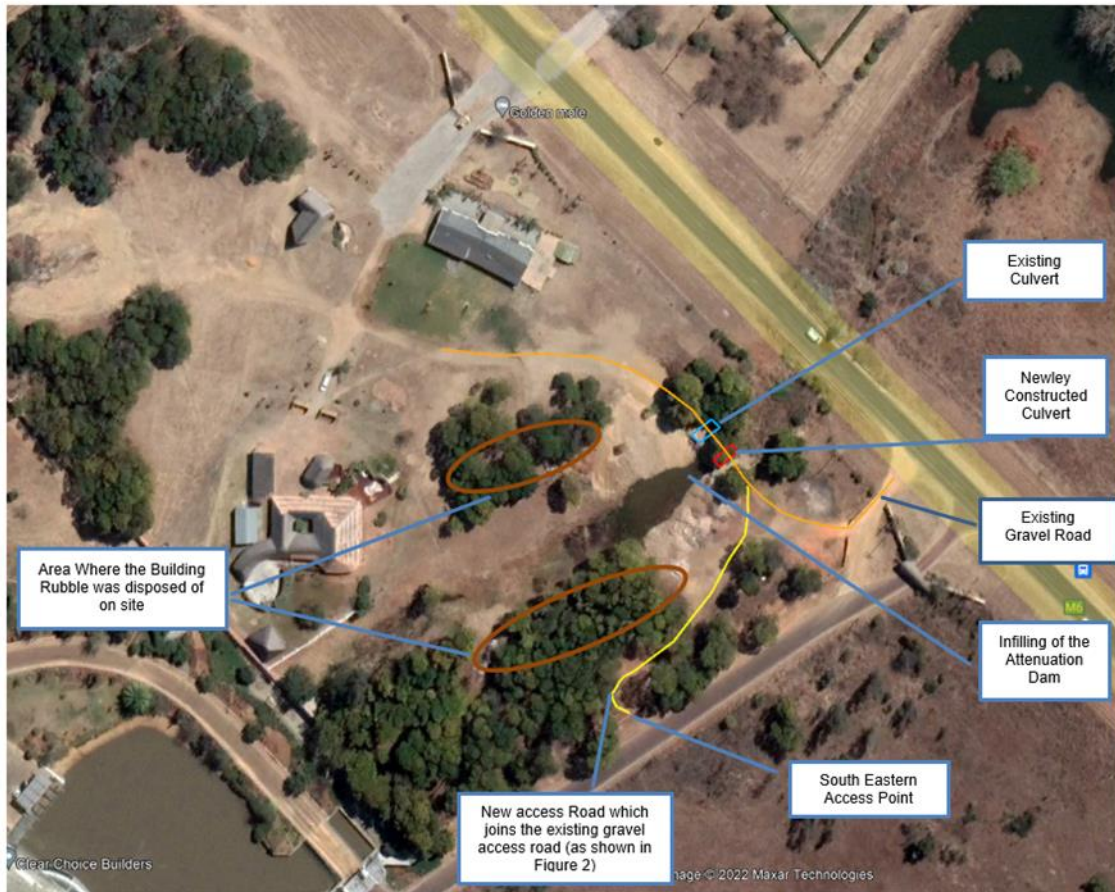
## 2.2 Activity description

### 2.2.1.1 Activities undertaken without authorisation

As the request for change in access was a formal response from the Gautrans, Ms Sethole was under the impression that she could commence with the construction activities on site without any further approvals. Construction activities on site commenced in June 2021 which include the following (**Figure 2-3**).

- Relocating the entry/exit point from Graham Road (north of the site) to the south east of the site (approximately 100m from Graham Road);
- The construction of an access road which joins the existing gravel road;
- Construction of a culvert within the watercourse;
- Paving of existing access road;
- Deposition and infilling with the watercourse with inert building rubble and soil stockpiled on site within a watercourse. The soil stockpiled on site was the soil excavated from the watercourse by the previous owner. Upon purchasing the property Ms Sethole found the soil stockpile on site.
- The disposal of inert waste on land (building rubble). Approximately 150m<sup>3</sup> of inert waste was stockpiled on site.

An attenuation dam previously existed along the watercourse, west of the existing water crossing. Ms Sethole has infilled the attenuation dam and constructed a second culvert with the intention to channelize the watercourse. The construction of a new culvert which serves as a new flow path (diversion) of the watercourse. In terms of the site topography, steeper slopes are located within the vicinity of the watercourse situated on site. Due to the steep slopes, extensive erosion is encountered on site, whereby the bank of the watercourse is extensively eroded. It was the intention of Ms Sethole to stabilise the banks of the watercourse by the infilling and compaction of waste/rubble material to achieve a levelled grassed area, hence the building rubble that has been disposed off on site.



**Figure 2-3 Google Earth Image (2021) showing the construction activities undertaken on site**

**2.2.1.2 Activities proposed as part of rehabilitation and continuation of construction activities**

The following activities are required to be completed, pending the outcome of this application. These activities have been assessed as part the EIR and are recommendations from the specialist studies undertaken.

- Energy breakers are to be installed on the downstream side of the two culvert structures to reduce the impact of the water flow speed through the outlet structures and reducing erosion
- Gabions are proposed to be installed upstream and downstream of the access road and culverts. The gabions will be constructed on top of a reno mattress. The gabions and reno mattress are simple gravity retaining structures which retains soil with its weight. The porosity of gabions prevents the pore-water pressure development behind the walls which, is one of the major advantages of these kinds of systems. These structures blend with the surroundings and allow vegetation to take roots through the structure which enhances the life of the structure and also result in a reduction of carbon foot prints.
- Riverbank slope re-shaping to prevent further erosion of the riverbanks. The slope re-shaping will be undertaken through the construction of a retaining wall eg gabions with reno mattress
- The boundary wall constructed south west of the site, allows for the flow of water through culverts situated beneath the wall. Due to the hydraulic action of the water, the watercourse bank and floor currently experiences erosion. Ms Sethole is therefore proposing to spread out the previously placed rocks at the south western boundary of the site (adjacent to the boundary wall), approximately 20m from the outlet structure to prevent further erosion. The rocks will be covered with reno mattresses.

It is important to note that the boundary wall was constructed by the adjacent neighbour and not Ms Sethole.

- The road crossing the watercourse was incomplete at the time when construction activities ceased on site, hence Mrs Sethole intends to complete the construction works by paving of the roadway and widening of the access road on the wingwalls of the culverts to allow for a pedestrian walkway.

The site layout is provided in **Figure 2-4**.

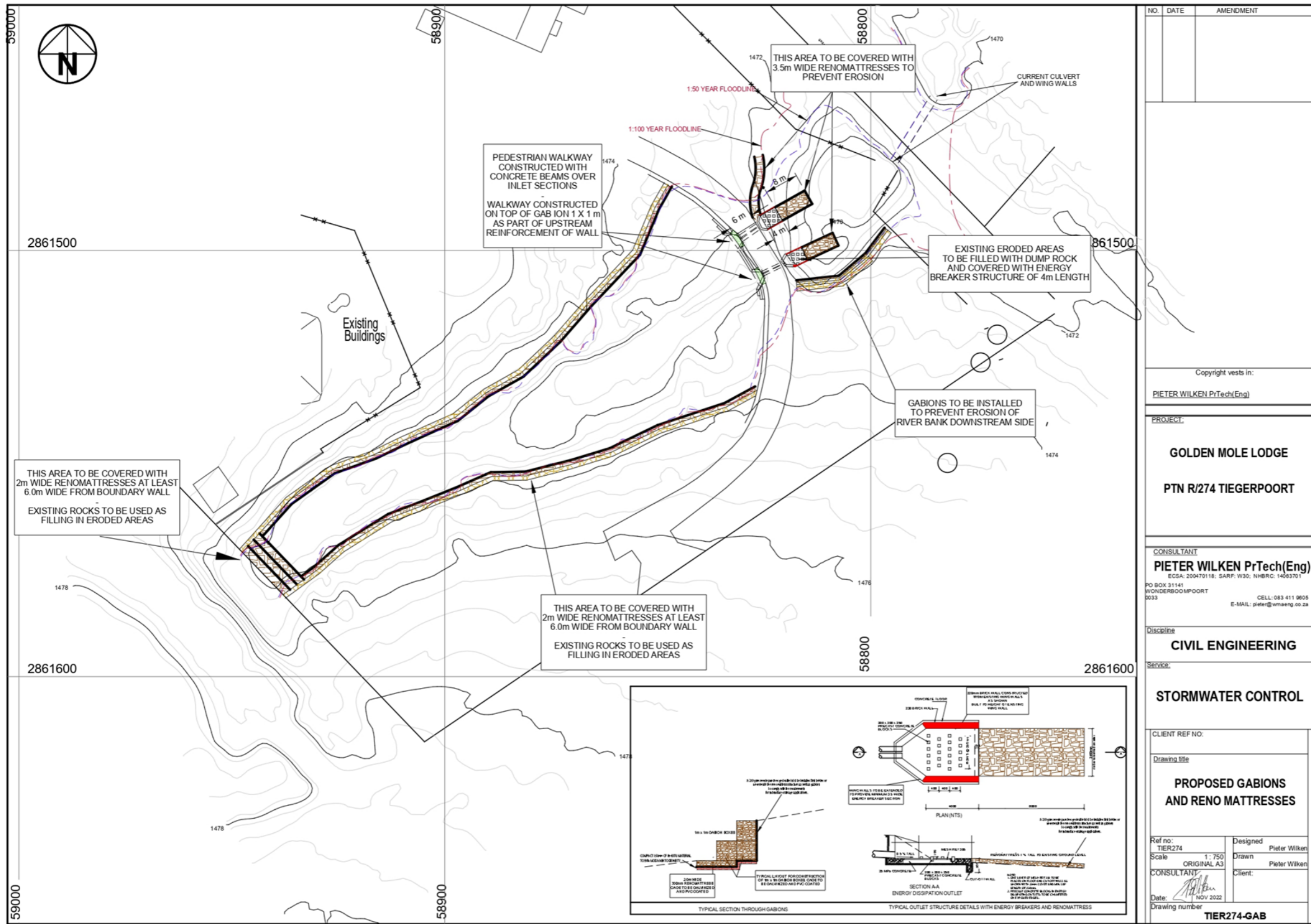


Figure 2-4: Site Layout

### 3 RIPARIAN VEGETATION DELINEATION

The unlicensed watercourse culvert crossing, and proposed activities are located in the Tierpoort area within the Ptn R/274 of the Farm Tiegerpoort 371JR boundary along the (M6) Graham Road and approximately 22 km south eastern outskirts of Pretoria City centre, City of Tshwane, Gauteng province, South Africa. The project area is within the Limpopo Water Management Area (WMA), Highveld – Lower Aquatic Ecoregion and within the A23A quaternary catchment. The watercourses which drain the project area is a single non-perennial tributary of the Pienaars River. An Aquatic Biodiversity Assessment was undertaken by the Biodiversity Company (2022).

The riparian areas along the assessed tributary reach were similar between the up and downstream sites. The project area was already disturbed with alien invasive plant species dominating the riparian area (**Figure 3-1**), such as **A) *Solanum mauritianum***, **D) *Manihot grahamii***, **E) *Ipomoea purpurea***, **F) *Bidens Pilosa***, **G) *Agave americana***, and ***Acacia mearnsii*** (known as Black wattle, **Error! Reference source not found.**). However, there were few scattered indigenous plant species such as **B) *Crassula ovata***, **C) *Typha capensis***, **H) *Leonotis leonurus*** and **I) *Aloidendron barberae***. The delineated riparian area for the project area is presented in **Figure 3-4**.

The vegetation on site is insensitive and no protected trees or species of conservational concern flora are likely to have occurred recently within the region. The numerous category 1b invasives must be controlled according to an Invasive Alien Plant Management Plan, in line with NEMBA legislation.

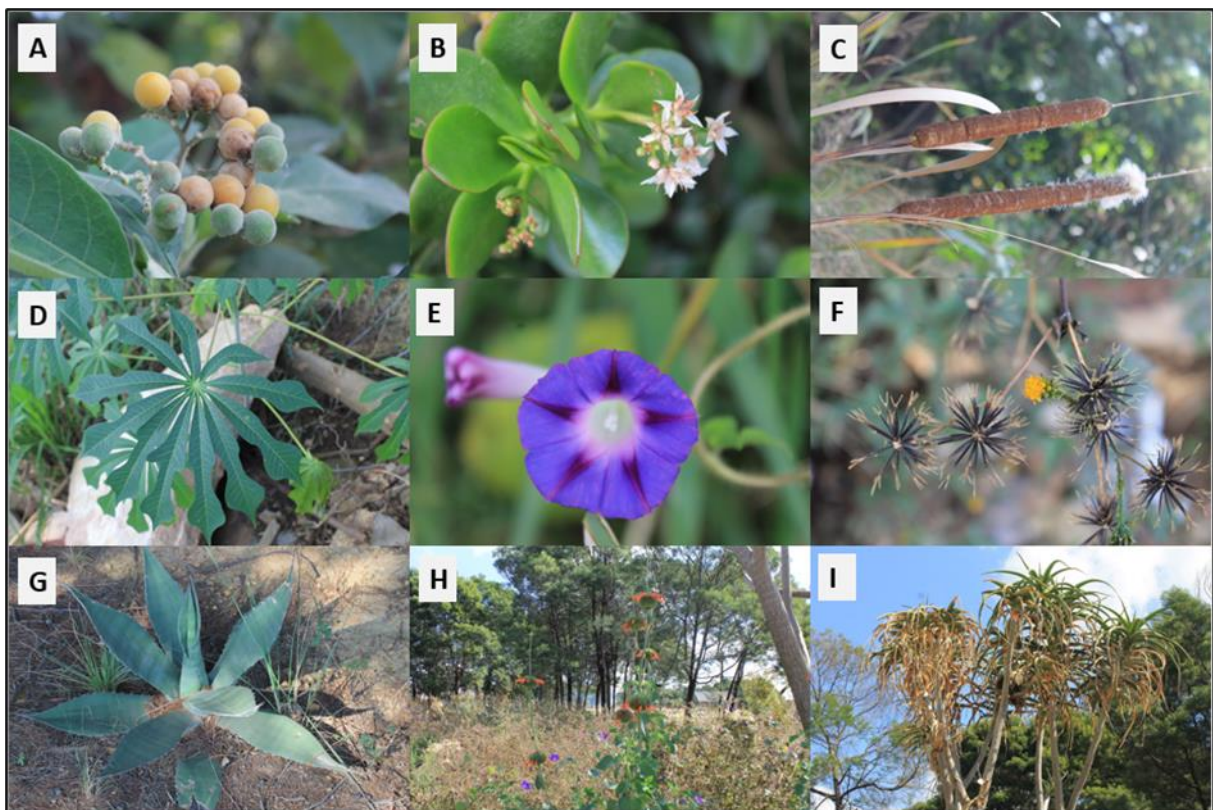


Figure 3-1: Plant species dominating the riparian area (may 2022) (TBC, 2022)





Figure 3-2: The right river bank facing upstream (May 2022) (TBC, 2022)



Figure 3-3: The left riverbank facing upstream (May 2022) (TBC, 2022)

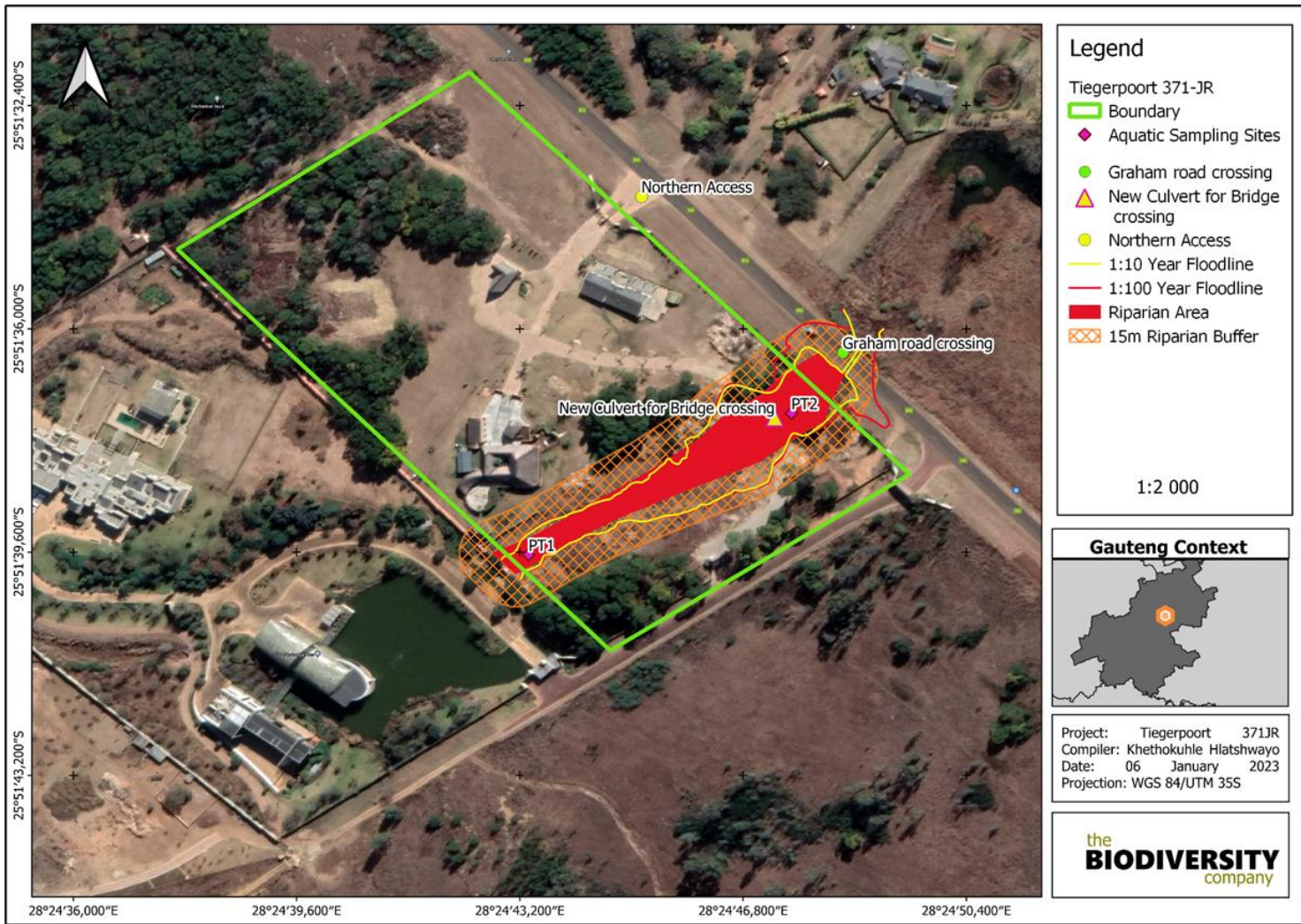


Figure 3-4: Riparian delineation for the associated tributary of the Pienaars River. Red=Highly sensitive area, Orange=Moderately sensitive area (TBC, 2022)

## ***4 ENVIRONMENTAL SENSITIVITY***

The following sensitive features were identified in the project area:

- A riparian area was delineated
- The project area falls within the 1:50 and 1:100 floodline
- The project area falls within an Ecological Support Area

The Environmental Sensitivity Map is provided in **Figure 4-1**.

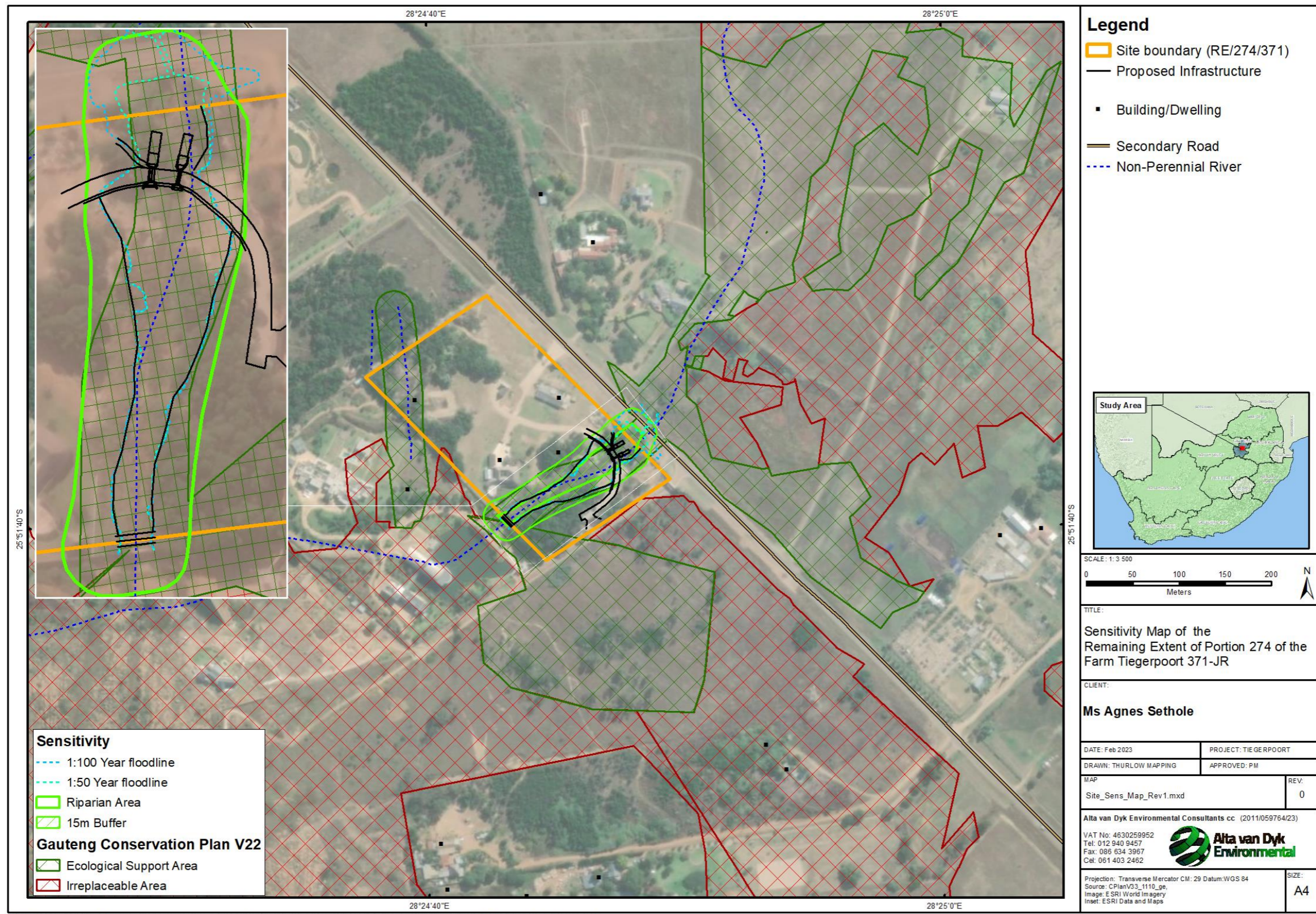


Figure 4-1: Environmental Sensitivity Map

## 5 REHABILITATION PLAN

Information provided in this Section has been sourced by the Aquatic Biodiversity Assessment undertaken by The Biodiversity Company (2022).

The rehabilitation plan was compiled to effectively management the unlawful construction and infilling activities as well as successfully manage the construction and post-construction activities to be undertaken if approval from GDARD is granted.

### 5.1 Rehabilitation Actions

Table 5:1 lists the rehabilitation measures to be implemented.

**Table 5:1 Rehabilitation actions for the project**

Aspect	Rehabilitation Plan	Responsibility
Access Road	<ul style="list-style-type: none"> <li>• Compacted soils need to be scarified/ripped and vegetated to reflect local indigenous flora;</li> <li>• Contouring should be completed to align with surrounding topography which will avoid ponding and erosion;</li> <li>• If required, fertilizers should be applied to increase the rate of revegetation;</li> <li>• Where access to the river bed has been made, the riverbank must be reinstated and revegetated to its original profile.</li> </ul>	Ms Sethole
River Channel Structures	<ul style="list-style-type: none"> <li>• Where erosional forces have/may destabilize riverbanks, riverbanks must be relandscaped to gentle slopes and green engineering structures may be used to protect the riverbanks;</li> <li>• Riverbanks and 15 m within the riparian zone needs to be revegetated and contoured, these areas need to be established as no-go areas (except for work required and authorised to be within the zone);</li> <li>• Compacted soils need to be scarified/ripped and vegetated to reflect local indigenous flora;</li> <li>• Contouring should be completed to align with surrounding topography which will avoid ponding and erosion. These contoured must not be steep as vegetation will not re-establish on steep slopes;</li> <li>• If soils were removed and stockpiled, these must be replaced in the order that they were originally found; and</li> <li>• No foreign debris must be present in the river bed and should be disposed of appropriately, this includes the left-over sediment screens and construction related rubble.</li> </ul>	Ms Sethole
Marginal Vegetation	<ul style="list-style-type: none"> <li>• Where riverine vegetation has been removed, the vegetation must be established systematically following the completion of the construction phase.</li> <li>• Effective alien invasive plant management must be implemented for at least 12 months following the completion of the construction.</li> </ul>	Ms Sethole

## 5.2 Re-Vegetation

- Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil;
- Relandscape to gentler gradients and re-vegetate all cleared areas as soon as possible to limit erosion potential. Sandbags and geotextiles should be used to assist until vegetation has established in these reworked areas;
- All areas that have been significantly denuded of vegetation due to the construction of the culvert crossing, which includes the incised and excavated banks and adjacent eroded areas must be landscaped to gentle gradients and revegetated;
- Re-vegetation should follow landscaping activities with follow-up seeding taking place in bare/exposed areas taking place over consecutive growing seasons for the life of the project;
- This approach ensures that the entire system is not denuded of vegetation all at once any challenges / short comings identified in the first revegetation areas can be rectified in the next; and
- Following the control of Invasive Alien Plant (IAP) bare area should be re-vegetated with suitable vegetation.

## 5.3 Time of planting

All planting shall be carried out as far as is practicable during the period most likely to produce beneficial results. The seasonal period recommended for the project area is from the beginning of September to the end of April.

## 5.4 Removal and Control of Alien Invasive Flora

Land users are required by law, to remove and / or control Category 1 alien invasive species (AIS) according to the National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEM:BA) Additionally, unless authorised, in terms of the NWA, no land user shall allow Category 2 plants to occur within 30 meters of the 1:50 year flood line of a river, stream, spring, natural channel in which water flows regularly or intermittently, lake, dam or wetland. Category 3 plants are also prohibited from occurring within proximity to a watercourse. No information has been provided as to the number and density of alien vegetation recorded for the project area, but it is recommended that an alien vegetation control and eradication plan be implemented for the project.

## 5.5 Erosion Control

- During rehabilitation, the Contractor shall protect all areas susceptible to erosion by installing all necessary temporary and permanent drainage works and by taking such other measures as may be necessary to prevent the concentration of surface water and scouring of slopes, banks and other areas;
- All erosion, such as runnels, channels or sheet erosion, that has developed during the project phase shall be backfilled and consolidated and the areas restored to gentle slopes and vegetated to limit future erosion at the Contractor's expense;
- The Contractor shall not allow erosion to develop on a large scale before effecting repairs and all erosion damage shall be repaired as soon as possible and, in any case, not later than two months before the termination of the Period of Maintaining; and
- All topsoil or other material accumulated inside drains shall be removed at the same time;
- Topsoil washed away must be replaced to allow for effective establishment of vegetation in these areas;

- Install sandbags as a temporary measure around key areas of soil loss to prevent soils washing into the local watercourse;
- Signs of erosion must be addressed immediately to prevent further erosion of the area to prevent head cut erosion from forming;
- Temporary and permanent erosion control methods may include silt fences, flotation silt curtains, retention basins, detention ponds, interceptor ditches, seeding and sodding, riprap of exposed embankments, erosion mats, and mulching;
- Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil; and
- Relandscape to gentler gradients and re-vegetate all cleared areas as soon as possible to limit erosion potential. Sandbags and geotextiles should be used to assist until vegetation has established in these reworked areas.

## 5.6 Shaping

- Areas requiring shaping involving bulk earthworks shall be excavated, filled, compacted when required, and shaped to the correct contours to within a tolerance of plus or minus 150 mm;
- Shaping will be to roughly round off cuts and fills and any other earthworks to stable forms, sympathetic to the natural surrounding landscape. Such work shall be considered as earthworks and measurement;
- The natural slope or topography of the area that has been affected by the clearing (as a result of the large earth moving machinery) needs to be restored in order to ensure that the flow of water and the growth of vegetation occurs naturally. The re-adjustment of the topography will also improve the general aesthetics of the area;
- The removal of all the piles within the project area such as vegetation, soil and old rubble is compulsory;
- The building rubble and general litter must be removed entirely from the area and disposed of at licensed facilities; and
- No existing or emerging vegetation should be destroyed or damaged during this process and where plants are emerging sloping should be done in a controlled manner such as using a shovel.

## 5.7 Trimming

- Trimming shall consist of bringing the existing or previously shaped ground to an even surface with the final levels generally following the original surface. Where machine operations are not practicable trimming shall be done using hand tools;
- Trimmed surfaces shall be left slightly rough to facilitate binding with topsoil or the natural establishment of vegetation; and

## 5.8 Preparation of areas for grassing

- The areas to be grassed consists of suitable material and the areas should be scarified to a minimum depth of 75 mm with furrows spaced at 250-300 mm centres;
- Scarifying along slopes shall run parallel to the contours, forming horizontal terraces to avoid promoting of erosion and associated loss of seeded topsoil;
- All loose stones and other excess material shall be removed during trimming. Where topsoil is required, the surface should be left slightly rough during trimming to ensure a proper bond between the topsoil and the subsoil;
- The topsoil should be placed on the prepared surfaces and trimmed to the uniform thickness and unless otherwise specified, a 75 mm layer of topsoil should be placed;

- The top 150 mm of the prepared surfaces should be tested and submitted to the Engineer to determine the amount and type of fertilizer required for establishing proper growth conditions for grass;
- The choice of the fertilizer to be used and the application thereof shall be the responsibility of the Contractor but shall be approved by the Engineer before application. Under no circumstances should fertilizer be used on the river banks or riparian zone as this will degrade water quality and ecological functioning; and

## **5.9 Soiling and seeding to follow earthworks**

- The Contractor shall undertake all soiling, seeding and grass establishment, with particular emphasis in the buffer area, taking into account the climatic conditions prevalent in order to maximise growth of vegetation and therefore reduce erosion.
- Watering, weeding, cutting and replanting
- All grassed areas shall be maintained during the rehabilitation of the area by adequate watering at frequent and regular intervals in order to ensure proper germination of seeds and growth of grass until an acceptable cover has been established and thereafter until the end of the rehabilitation phase. The amount and frequency of watering shall be at the discretion of the Contractor;
- Should seeding take place during the winter season (dry season, where possible), adequate watering at frequent and regular intervals is recommended in order to ensure proper germination of seeds and growth of grass until an acceptable cover has been established;
- Weeds shall be controlled by means of extraction, cutting or other approved means. The Contractor shall mow or cut all grassed areas to promote adequate coverage, until the end of the rehabilitation phase. All grass cuttings shall be collected and disposed of in a responsible manner; and
- Any plants not immediately replanted are the responsibility of the Contractor and shall be kept under approved nursery conditions



## **6 CONCLUSION**

Ms Agnus Sethole upon the receipt of a decision made by GDARD with regards to this S24G application will need to undertake rehabilitation. If the application is successful rehabilitation will be conducted as per this report as to ensure minimal impacts to the affected watercourse during and post construction. If the application is unsuccessful rehabilitation will involve returning the affected area back to its original environmental state, this will be undertaken as per the recommendations to be provided by GDARD.

## **7 UNDERTAKING BY THE EAP**

In accordance with Appendix 1 of the NEMA EIA Regulations, 2014, as amended, this serves as an affirmation by the Environmental Assessment Practitioner (EAP) in relation to:

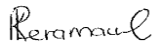
### Section 3(1)(r)

An undertaking under oath or affirmation by the EAP in relation to-

- (i) The correctness of the information provided in the reports;
- (ii) The inclusion of comments and inputs from stakeholders and I&APs;
- (iii) The inclusion of inputs and recommendations from the specialist reports where relevant; and
- (iv) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.

AVDE and the EAP managing this project hereby affirm that:

- To the best of our knowledge the information provided in the report is correct, and no attempt has been made to manipulate information to achieve a particular outcome. Some information, especially pertaining to the project description, was provided by the applicant and/or their sub-contractors.
- To the best of our knowledge, all comments and inputs from stakeholders and interested and affected parties have been captured in the report and no attempt has been made to manipulate such comment or input to achieve a particular outcome. Written submissions are appended to the report while other comments are recorded within the report. For the sake of brevity, not all comments are recorded verbatim and are mostly captured as issues, and in instances where many stakeholders have similar issues, they are grouped together, with a clear listing of who raised which issue(s).
- Information and responses provided by the EAP to interested and affected parties are clearly presented in the report. Where responses are provided by the applicant (not the EAP), these are clearly indicated.



---

Signature of Environmental Assessment Practitioner

Alta van Dyk Environmental Consultants cc

Name of Company

## 8 REFERENCES

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## ***12 ANNEXURE C: EMERGENCY RESPONSE PLAN***



## **Unlawful Construction and Infilling of a Watercourse on the Remainder of Portion 274 of the Farm Tiegerpoort 371 JR**

### **Emergency Response Plan**

March 2023

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# Unlawful Construction and Infilling of a Watercourse on the Remainder of Portion 274 of the Farm Tiegerpoort 371 JR

## Emergency Response Plan

March 2023

AVDE Project Ref: Tiegerpoort 371

Prepared by: Tyla Leigh Smith & Kirthi Peramaul



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The opinions expressed in this Report have been based on the information supplied to Alta van Dyk Environmental Consultants cc (AvDEnvironmental) by company officials. The opinions in this Report are provided in response to a specific request from company officials to do so. AvDEnvironmental has exercised all due care in reviewing the supplied information. Whilst AvDEnvironmental has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. AvDEnvironmental does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this report apply to the site conditions and features as they existed at the time of AvDEnvironmental's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which AvDEnvironmental had no prior knowledge nor had the opportunity to evaluate.

### VERSION CONTROL

Alta van Dyk Environmental cc

Version: Final

Approved by: Alta van Dyk

Signed:

A handwritten signature in black ink, appearing to read "Alta van Dyk".

Position: Environmental Specialist

Date: March 2023

## *Table of Contents*

<b>1</b>	<b>Introduction and Background</b>	<b>1</b>
1.1	<i>Background</i>	1
1.2	<i>Locality</i>	1
1.3	<i>Purpose</i>	2
1.4	<i>Legislation</i>	2
<b>2</b>	<b>Project Description</b>	<b>2</b>
2.1	<i>Project Overview</i>	2
2.2	<i>Activity description</i>	3
2.2.1	Activities undertaken without authorisation	3
2.2.2	Activities proposed as part of the rehabilitation and continuation of construction activities	4
<b>3</b>	<b>Details of Emergency Response Plan</b>	<b>6</b>
3.1	<i>Emergency Contact Numbers</i>	6
3.2	<i>Potential Emergencies</i>	6
3.3	<i>Emergency Equipment</i>	6
3.4	<i>Emergency Procedures</i>	6
3.4.1	Injury to any person	6
3.4.2	Discovering a Fire	7
3.4.3	Flooding	7
3.4.4	Armed Robbery Procedures	7
3.4.5	Interruption of Essential Services	8
3.4.6	Evacuation Plan	8
<b>4</b>	<b>Conclusion</b>	<b>9</b>

## *List of Tables*

Table 1:1	Project location details .....	2
Table 1:2	Property Description.....	2
Table 3:1	Emergency Contact Details .....	6

## *List of Figures*

Figure 1:1	Locality Map (Thurlow Mapping, 2022)	1
Figure 2:1	Access road recommended by Gautrans (indicated with the blue broken line)	2
Figure 2:2	Google Earth Image (2019) showing the access points in relation to the site	3
Figure 2:3	Google Earth Image (2021) showing the construction activities undertaken on site	4



## ***ABBREVIATIONS***

AvDE	Alta van Dyn Environmental Consultants cc
CoT	City of Tshwane
CoTMM	City of Tshwane Metropolitan Municipality
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ERP	Emergency Response Plan
Gautrans	Gauteng Department of Roads and Transport
GDARD	Gauteng Department of Agricultural and Rural Development
GN	Government Notice
NEM:WA	National Environmental Management: Waste Act (Act No. 59 of 2008)
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NWA	National Water Act (Act No. 36 of 1998)

# **1 INTRODUCTION AND BACKGROUND**

## **1.1 Background**

In June 2021, Ms Sethole commenced with activities listed in terms of National Environmental Management Act (Act 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations 2014 (as amended) and National Environmental Management Waste Act (Act 59 of 2008) (NEM:WA), 2008, Government Notice (GN) Regulation 921 of 2013 within a watercourse without obtaining Environmental Authorisation (EA) from the relevant Competent Authority, the Gauteng Department of Agriculture and Rural Development (GDARD). Realising the contravention, Ms Sethole has voluntarily decided to undertake a Section 24G application process and construction activities on site have ceased.

A Directive in terms of Section 24G (1) of the NEMA, as amended, was issued to Ms Sethole by the GDARD on the 13 October 2022, Ref: S24G/03/22-23/0577. for the following unlawful activities:

- The unlawful construction of a culvert within a watercourse,
- The widening of an existing access road, deposition and infilling with inert rubble and excavations within a watercourse,
- The disposal of inert waste on land (building rubble).

Alta van Dyk Environmental Consultants (AvDE) was appointed by Sethole as the independent Environmental Assessment Practitioner (EAP) to undertake the Section 24G application process.

## **1.2 Locality**

The project is situated on the Remainder of Portion 274 of the Farm Tiegerpoort 371-JR. The property is located on Graham Road, approximately 11km south east from the intersection of Graham Road and Solomon Mahlangu Drive, Tierpoort, within City of Tshwane Metropolitan Municipality (CoTMM). Further information can be found within Table 1:1 and Table 1:2 below. Refer to

Figure 1:1 for the locality map.

**Table 1:1 Project location details**

Site specific details	Description
Municipal jurisdiction	City of Tshwane Metropolitan Municipality
Ward number	Ward 102
Nearest town	Pretoria
Site Centre Coordinates	25°51'38.54"S: 28°24'45.39"E.

**Table 1:2 Property Description**

Farm Name	Farm Tiegerpoort 371-JR
Portion	274
Registered Landowner	Ms Agnus Sethole
SG21 number	TOJR0000000037100000

### 1.3 Purpose

GDARD have requested that an Emergency Response Plan (ERP) be prepared for the unlawful construction and infilling of a watercourse on the Remainder of Portion 274 of the Farm Tiegerpoort 371 JR. The purpose of this report is to outline the key actions that will be taken by the applicant (Ms Agnus Sethole) in addition the purpose of this ERP is to reduce human injury and damage to property in an emergency.

### 1.4 Legislation

In terms of this Emergency Response Plan the following has been taken into account:

- Emergency Service By-Laws
- Disaster Management Act (Act No. 57 of 2022)
- Fire Brigade Act (Act No. 99 of 1987)
- SANS 100400 Part T – Fire Protection
- ISO/PAS 22399: 2007 – Guideline for incident preparedness and operational continuity management
- SANS 23601 : 2010 – Emergency Escape Plans
- Occupational Health and Safety Act (Act No. 85 of 1993)

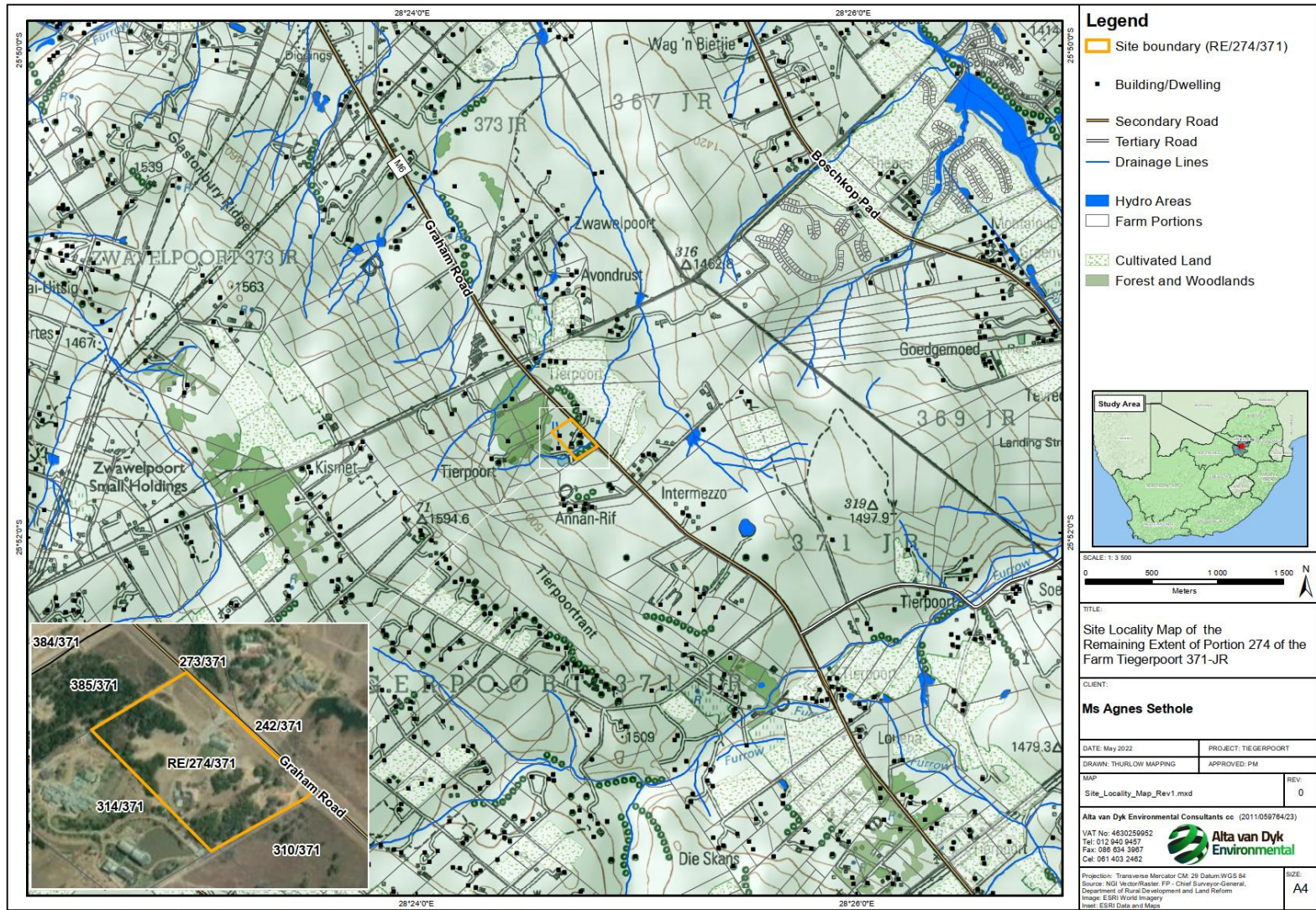


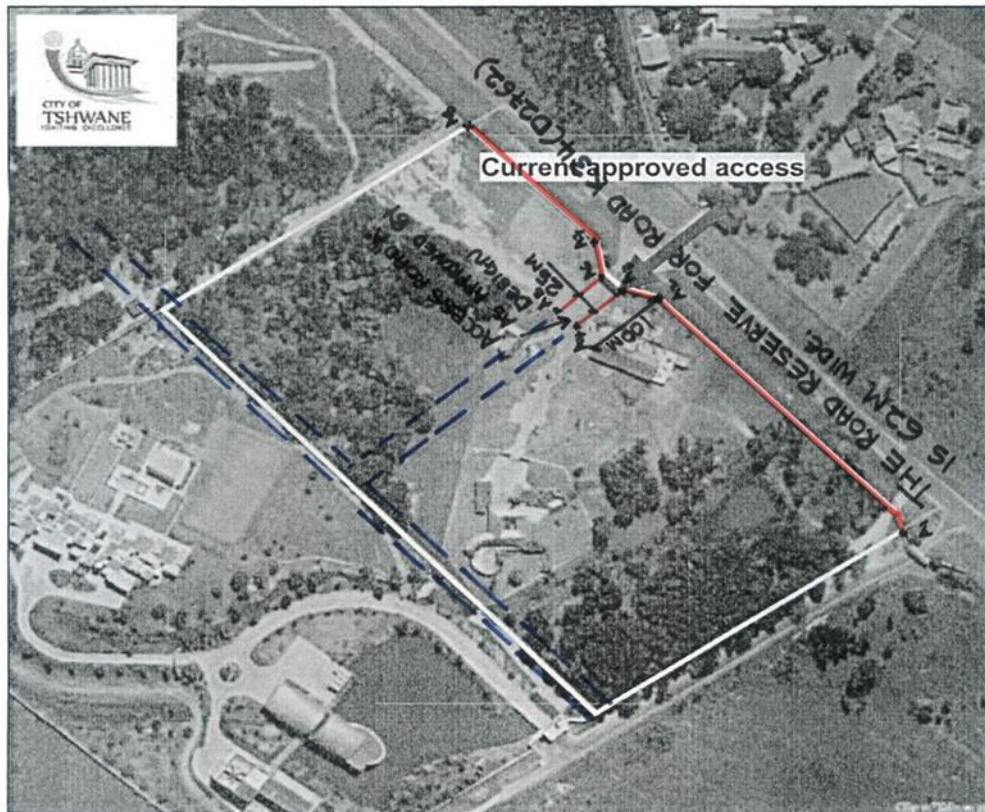
Figure 1:1 Locality Map (Thurlow Mapping, 2022)

## 2 PROJECT DESCRIPTION

### 2.1 Project Overview

The current consent of use for the property is for a “guesthouse” which was approved by the former Kungwini Local Municipality. It is however the intention of Ms Sethole to include certain land uses on the site to make provision for a wider convenient service to be provided at the facility. These include a conference center, wedding chapel, staff quarters, and self-catering units. The aforementioned land uses do not fall under the definition of a guest house, hence Ms Sethole applied to the City of Tshwane (CoT) for consent of a lodge in 2019.

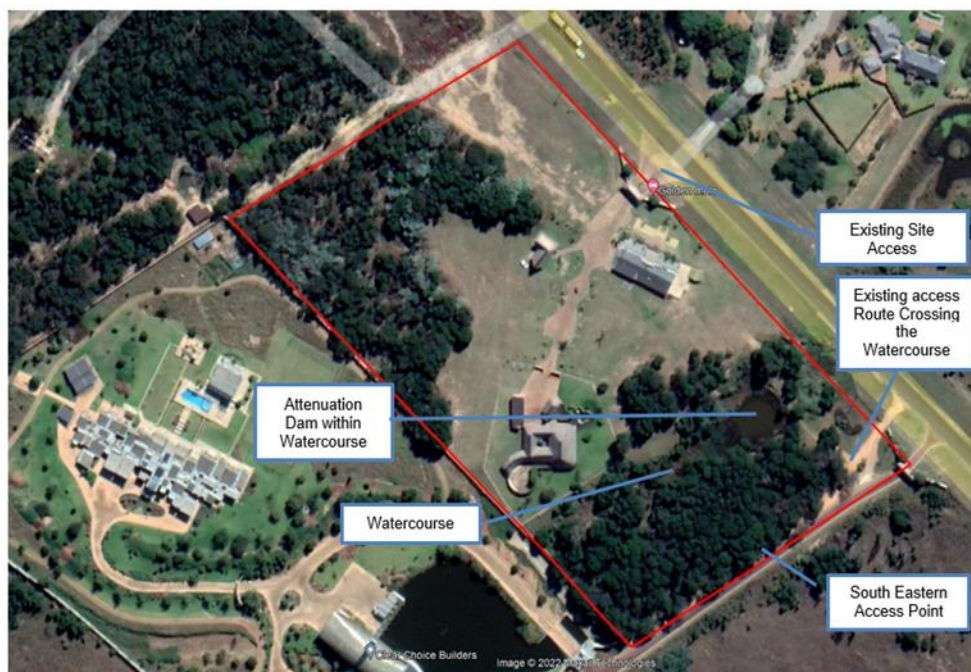
Approval in terms of the consent use application has not yet been obtained from the CoT. In February 2021, the Gauteng Department of Roads and Transport (Gautrans) as a Commentary Authority commented on the application with certain conditions and recommended the change in access point to the site. Two access points were recommended by Gautrans. The two access points are shown in Figure 2:1 with the blue broken lines.



**Figure 2:1 Access road recommended by Gautrans (indicated with the blue broken line)**

Comments received from the CoT: Transportation Planning Division indicated that the current access point to the facility shall be relocated as it is not in line with the CoT Roads Master Plan (RMP). Currently access to the site is gained from the north eastern boundary off Graham Road. The CoT also advised that they are not in agreement with the comments provided by Gautrans and the CoT requested that access to the property should be gained from the right of way servitude that intersects with Graham Road.

This is the gravel road to the south east of the property. The new access road will join an existing road (developed prior to 1998). The existing road is a narrow width gravel road, approximately 4m wide which traversed the watercourse. (Figure 2:2). In order to make use of the existing access road, access to the site will have to be via the south eastern boundary.



**Figure 2:2** Google Earth Image (2019) showing the access points in relation to the site

Due to the constrictions associated with the south eastern access, Ms Sethole appointed Design Engineers for the design of the road and a floodline assessment was undertaken to determine the geographical location of the relevant floodlines.

## 2.2 Activity description

### 2.2.1 Activities undertaken without authorisation

As the request for change in access was a formal response from the Gautrans, Ms Sethole was under the impression that she could commence with the construction activities on site without any further approvals. Construction activities on site commenced in June 2021 which include the following (Figure 2:3).

- Relocating the entry/exit point from Graham Road (north of the site) to the south east of the site (approximately 100m from Graham Road);
- The construction of an access road which joins the existing gravel road;
- Construction of a culvert within the watercourse;
- Paving of existing access road;
- Deposition and infilling with the watercourse with inert building rubble and soil stockpiled on site within a watercourse. The soil stockpiled on site was the soil excavated from the watercourse by the previous owner. Upon purchasing the property Ms Sethole found the soil stockpile on site.
- The disposal of inert waste on land (building rubble). Approximately 150m<sup>3</sup> of inert waste was stockpiled on site.

An attenuation dam previously existed along the watercourse, west of the existing water crossing. Ms Sethole has infilled the attenuation dam and constructed a second culvert with the intention to channelize the watercourse. The construction of a new culvert which serves as a new flow path (diversion) of the watercourse. In terms of the site topography, steeper slopes are located within the vicinity of the watercourse situated on site. Due to the steep slopes, extensive erosion is encountered on site, whereby the

bank of the watercourse is extensively eroded. It was the intention of Ms Sethole to stabilise the banks of the watercourse by the infilling and compaction of waste/rubble material to achieve a levelled grassed area, hence the building rubble that has been disposed off on site.



**Figure 2:3 Google Earth Image (2021) showing the construction activities undertaken on site**

### **2.2.2 Activities proposed as part of the rehabilitation and continuation of construction activities**

The following activities are required to be completed, pending the outcome of this application. These activities have been assessed as part the EIR and are recommendations from the specialist studies undertaken.

- Energy breakers are to be installed on the downstream side of the two culvert structures to reduce the impact of the water flow speed through the outlet structures and reducing erosion
- Gabions are proposed to be installed upstream and downstream of the access road and culverts. The gabions will be constructed on top of a reno mattress. The gabions and reno mattress are simple gravity retaining structures which retains soil with its weight. The porosity of gabions prevents the pore-water pressure development behind the walls which, is one of the major advantages of these kinds of systems. These structures blend with the surroundings and allow vegetation to take roots through the structure which enhances the life of the structure and also result in a reduction of carbon foot prints.
- Riverbank slope re-shaping to prevent further erosion of the riverbanks. The slope re-shaping will be undertaken through the construction of a retaining wall eg gabions with reno mattress

- The boundary wall constructed south west of the site, allows for the flow of water through culverts situated beneath the wall. Due to the hydraulic action of the water, the watercourse bank and floor currently experiences erosion. Ms Sethole is therefore proposing to spread out the previously placed rocks at the south western boundary of the site (adjacent to the boundary wall), approximately 20m from the outlet structure to prevent further erosion. The rocks will be covered with reno mattresses. It is important to note that the boundary wall was constructed by the adjacent neighbour and not Ms Sethole.
- The road crossing the watercourse was incomplete at the time when construction activities ceased on site, hence Mrs Sthole intends to complete the construction works by paving of the roadway and widening of the access road on the wingwalls of the culverts to allow for a pedestrian walkway.



### 3 DETAILS OF EMERGENCY RESPONSE PLAN

**Applicant Name:** Agnus Sethole

**Location:** Remainder of Portion 274 of the Farm Tiegerpoort 371-JR

**Date completed:** 28 February 2023

#### 3.1 Emergency Contact Numbers

**Table 3:1** Emergency Contact Details

Emergency Contact	Contact Number
Tshwane Emergency Services Department	107 or alt 012 358 6300/6400
Fire or Disaster Management / City of Tshwane Fire and Rescue	107 or alt 012 358 6300 / 6400
Metro Police	012 358 7095 / 6
Gauteng Emergency Medical Services	10177
City of Tshwane Fire and Rescue	012 358 2124
Local Hospital - Intercare Day Hospital - Hazeldean	012 880 0700
Local Hospital - Netcare Pretoria East Hospital	012 422 2300
Council Service Complaints (Water, Electricity, Solid Waste ect.)	012 358 9999
Fire Station - Erasmuskloof	012 310 6300
SAPS Emergency Number	10111
SAPS Boschkop Police Station	012 802 8230
SAPS Garsfontein Police Station	012 348 5900

#### 3.2 Potential Emergencies

The following potential emergencies have been identified for this site:

- Injury to any person
- Flooding
- Fire
- Breaking and Entering – Vandalism, Armed Robbery

#### 3.3 Emergency Equipment

The following equipment should be kept on site constantly in the event of an emergency and should be within good working order:

- First Aid Kit
- Fire extinguisher
- Emergency communication equipment (example: cell phones / landlines, torch )
- Other (Equipment that can be used in emergency situations, e.g. generator, water, rescue equipment, etc)

#### 3.4 Emergency Procedures

##### 3.4.1 Injury to any person

In the event of an Injury to any person the following procedure should be followed:

- In the case of a medical accident or problem that is not deemed serious provide the first aid kit to help the victim manage the injury.
- If the injuries are serious contact the relevant hospital / clinic or nearest paramedics. Do not move the victim in case of internal injuries
  - Await paramedics and instruct them to proceed to the accident site.

- Inform the paramedic called out of the following:
  - Telephone number of the person reporting the incident;
  - Nature of injuries to accident victim or victims;
- Location of injury on body (arm, leg, head, etc.);
  - Where the accident victim is presently;
  - What is the condition of victim (breathing, stable, etc?); and
  - If an ambulance is required to evacuate victim from surface location to hospital.

### **3.4.2 Discovering a Fire**

- Raise the fire alarm or notify the relevant emergency personnel
- Do not attempt to put out the fire unless you are trained to do so
- Await further instructions from the supervisor

#### **IN THE EVENT OF A FIRE, THE FOLLOWING PROCEDURES NEED TO BE CARRIED OUT IN SEQUENCE.**

Notify the location of the fire to:

- The relevant emergency personnel; or local emergency services
- Do not run
- Remove high-heeled shoes
- When instructed proceed directly to the nearest exit
- Do not try and collect personal belongings
- Remain at the assembly point you are directed to, until roll call has been taken and the all-clear given

### **3.4.3 Flooding**

- Notify the relevant emergency personnel; or local emergency services
- Do not stand beneath any power lines or in close proximity to any other electrical equipment
- Move to the highest point within the site and towards the exit
- Make use of alternative access point at Graham Road
- Await further instructions from the relevant personnel

### **3.4.4 Armed Robbery Procedures**

If an armed robbery occurs on the site, the motive will be to rob a person of cash or valuables. In the event of an armed robbery, the following guideline should be followed:

- If confronted by armed person (s), do not resist and follow instructions.
- Avoid eye contact
- Listen – do not make conversation
- Observe – look for distinguishing features, scars, etc. Remember, these people are threatening your life! They must be caught.
- Observe colour of clothing, jewellery, shoes, rings etc., this information can assist the police in tracking the perpetrators.
- Do not make sudden moves
- Do not threaten the robbers
- Do not panic – keep calm

#### **PREVENTING AN ARMED ROBBERY**

- Observe people loitering around the main entrance. Ask if you can help them or ask them to leave.
- Observe visitors and report any person asking questions about security or alarms

- Look for firearms
- Armed robbers are normally well dressed and will know exactly who or where they are going to attack. It is therefore important to be observant.

### **3.4.5 Interruption of Essential Services**

Report the interruption to the organisation concerned.

### **3.4.6 Evacuation Plan**

Develop a site plan indicating emergency gathering points as well as all emergency exits and the planned emergency route to be followed. The site evacuation plan should include the following:

- Emergency exits
- Dangerous materials
- Assembly points
- Roads

## **4 CONCLUSION**

This document was developed in response to Section 8.6.3.13 of the Directive received in terms of Section 24G (1) of the NEMA, as amended, issued by GDARD on the 13 October 2022, Ref: S24G/03/22-23/0577.

The aim of this Emergency Response Plan is to provide a highlight of the possible emergencies which can occur on site and provide a procedure or plan on how these emergencies can be addressed.