



## **Wetland Baseline and Delineation Assessment for the Harmony Gold Mponeng Lower Compartment Tailings Storage Facility**

**Merafong Local Municipality, West Rand District  
Municipality, Gauteng West Province, South Africa**

**18/07/2025**

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<b>Report Name</b>	<b>Wetland Baseline and Delineation Assessment for the Harmony Gold Mponeng Lower Compartment Tailings Storage Facility</b>	
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<b>Declaration</b>	<p>The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, Amended. We have no conflicting interests in the undertaking of this activity and have no interest in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.</p>	

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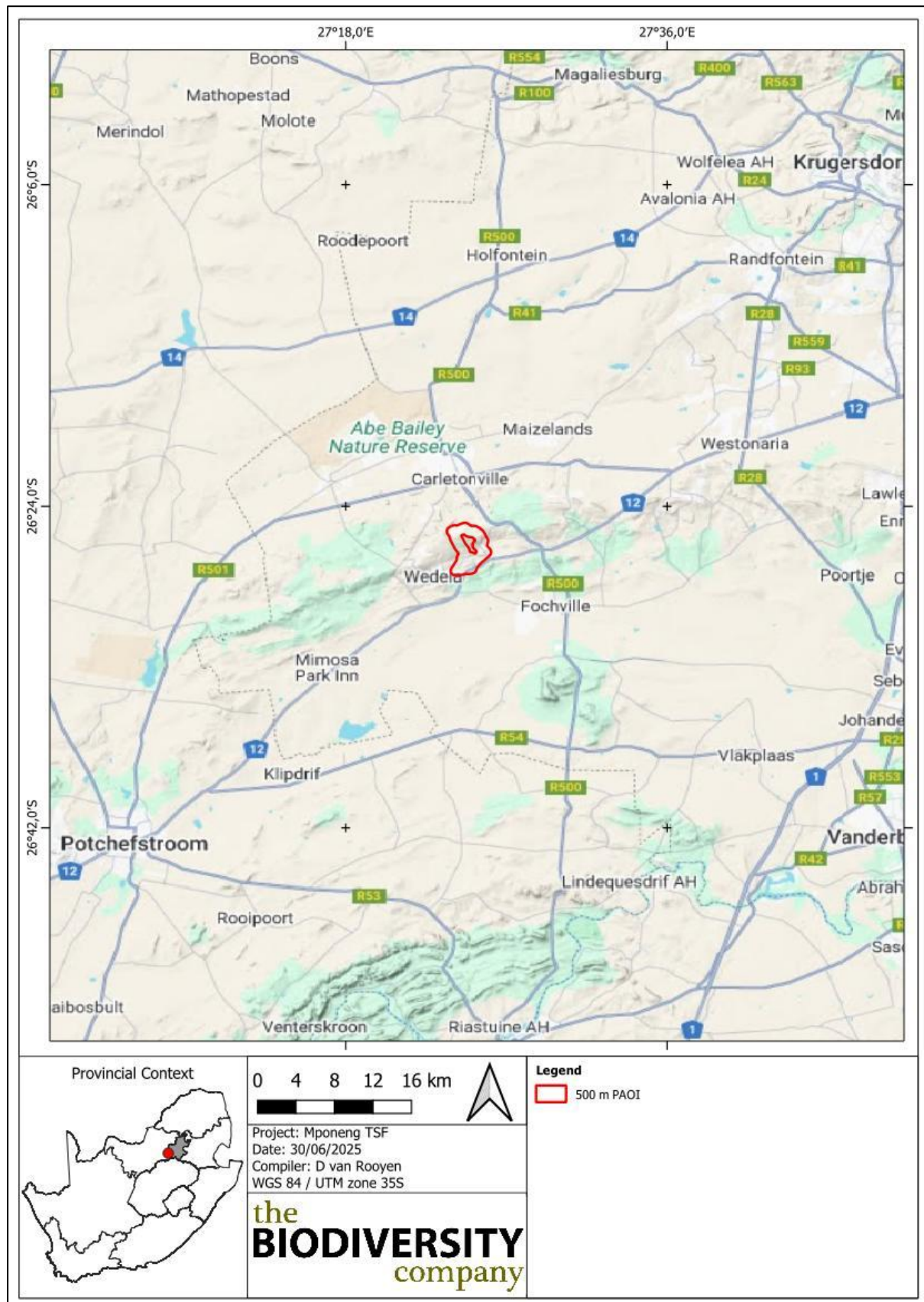
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## **1 Introduction**

### **1.1 Background**

The Biodiversity Company was commissioned to conduct a wetland baseline and delineation assessment in support of the environmental authorisation and amendment of water use license processes for the proposed Mponeng Lower Compartment Tailings Storage Facility (TSF) project. The proposed project involves recommencing deposition on the Mponeng Lower Compartment TSF (hereafter referred to as Mponeng Lower Compartment TSF). The Mponeng Lower Compartment TSF is currently not in operation and is used as a holding dam and partially as a landfill facility. Furthermore, the Mponeng Lower Compartment TSF is situated in close proximity to Carletonville, Merafong Local Municipality, West Rand District Municipality, Gauteng Province (Figure 1-1). A 500 m radius has been demarcated for the project to facilitate the identification of wetlands; this area is referred to as the Project Area of Influence (PAOI).



## **1.2 Scope of Work**

The following tasks were completed in fulfilment of the terms of reference for this assessment:

- A desktop assessment of available and related datasets to provide context of the freshwater biodiversity of the project area and to indicate potential wetland areas;
- The delineation of wetlands within 500 m of the project area; and
- Report compilation detailing the baseline findings.

## **1.3 Project Description and Technical Information**

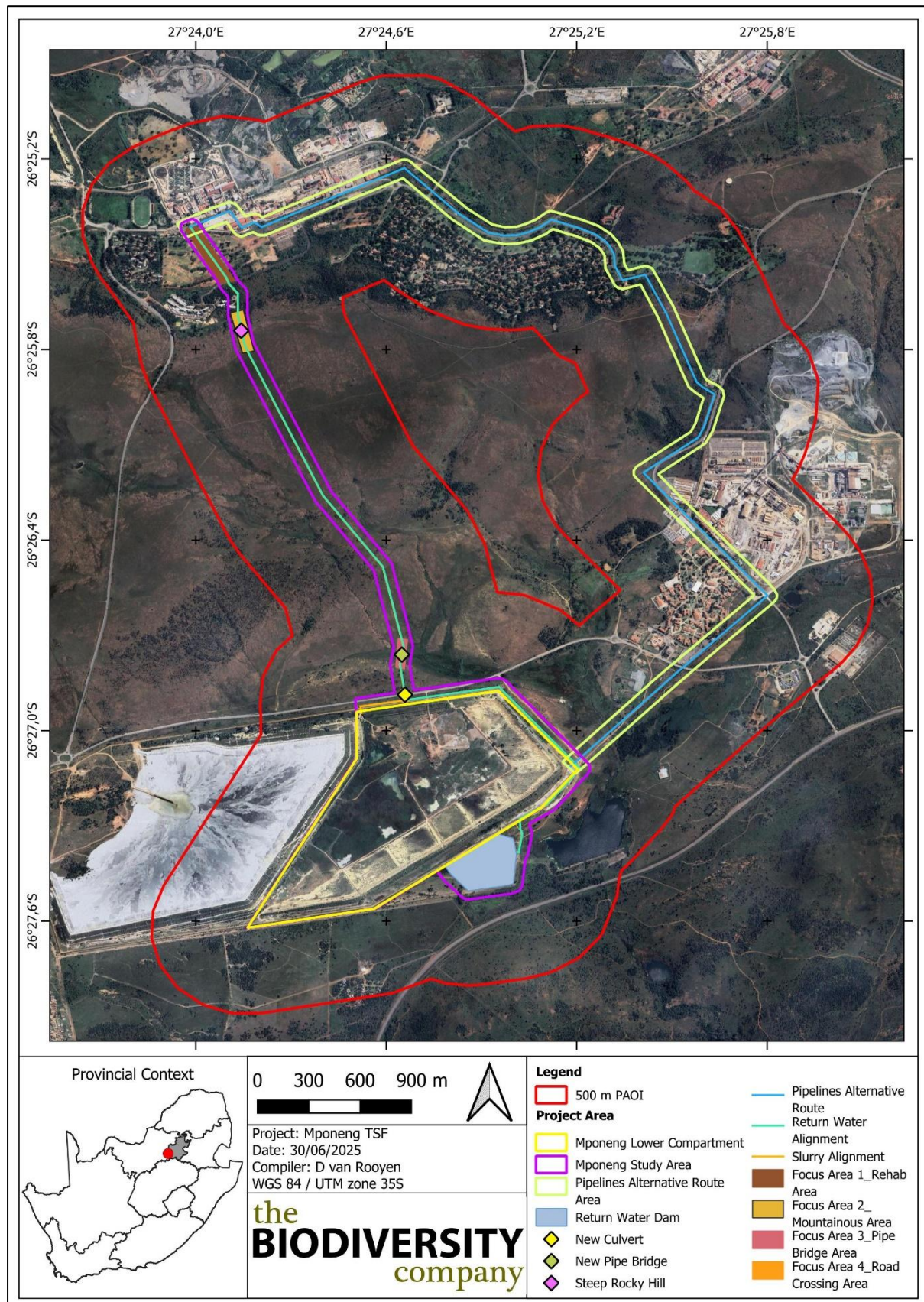
Harmony Gold Mining Company Limited has appointed Environmental Impact Management Services (Pty) Ltd (EIMS) as the Environmental Assessment Practitioner to manage the environmental authorisation and consultation processes for a proposed tailings deposition project in the West Wits region, Gauteng Province. The project involves recommencing deposition on the Mponeng Lower Compartment Tailings Storage Facility (Mponeng Lower Compartment TSF), which is currently not in operation and is used as a holding dam and partially as a landfill facility.

The need for this project arises because the existing Savuka 5a, 5b, 7a & 7b Tailings Storage Facilities are nearing their approved capacity, while the planned Life of Mine (LoM) for the West Wits region exceeds the available deposition space. To address this, the applicant proposes to construct slurry and return water pipelines from the Savuka Plant to the Mponeng Lower Compartment TSF. Two alternative pipeline routes are under consideration; both designed to transport tailings slurry and return water between the facilities (Figure 1-2).

The project requires multiple authorisations, including:

- Environmental Authorisation under the National Environmental Management Act (NEMA) for various listed activities;
- A Waste Management Licence under the National Environmental Management: Waste Act (NEM:WA); and
- A Water Use Licence under the National Water Act (NWA).





**Figure 1-2** Proposed Mponeng site and Project Area of Influence



## **1.4 Assumptions and Limitations**

The following aspects were considered as limitations:

- It has been assumed that the spatial files provided to the specialist is accurate;
- Apart from the spatial information as indicated in Figure 1-2, no other relevant spatial information in terms of the structure location and design was provided in relation to the proposed development at the time of survey and report preparation;
- The delineations presented herein were derived from previous assessments undertaken for the area and, are considered to be representative and sufficient for the purpose of this assessment;
- The seasonality of the above-mentioned surveys is not considered to be a limiting factor of the assessment, for which the results are conclusive in the opinion of the specialist; and
- The GPS used for water resource delineations is accurate to within five meters. Therefore, the wetland delineation plotted digitally may be offset by a maximum of five meters to either side.

## **1.5 Legislation**

### **1.5.1 National Water Act (NWA, 1998)**

The DWS is the custodian of South Africa's water resources and therefore assumes public trusteeship of water resources, which includes watercourses, surface water, estuaries, or aquifers. The National Water Act (Act No. 36 of 1998) (NWA) allows for the protection of water resources, which includes:

- The maintenance of the quality of the water resource to the extent that the water resources may be used in an ecologically sustainable way;
- The prevention of the degradation of the water resource; and
- The rehabilitation of the water resource.

A watercourse means:

- A river or spring;
- A natural channel in which water flows regularly or intermittently;
- A wetland, lake or dam into which, or from which, water flows; and
- Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

The NWA recognises that the entire ecosystem, not just the water itself, constitutes a water resource and as such needs to be conserved. No activity may therefore take place within a watercourse unless it is authorised by the DWS. Any area within a wetland or riparian zone is therefore excluded from development unless authorisation is obtained from the DWS in terms of Section 21 (c) and (i).

### **1.5.2 National Environmental Management Act (NEMA, 1998)**

The National Environmental Management Act (NEMA) (Act 107 of 1998) and the associated Regulations as amended in April 2017, states that prior to any development taking place within a wetland or riparian area, an environmental authorisation process needs to be followed. This could follow

either the Basic Assessment Report (BAR) process or the Environmental Impact Assessment (EIA) process depending on the scale of the impact.

## 2 Fieldwork

An initial field survey which covered majority of the Mponeng Lower Compartment TSF project area was undertaken in conjunction with the Savuka 5a, 5b, 7a & 7b project on the 11<sup>th</sup> of December 2024 which constitutes as a wet season survey.

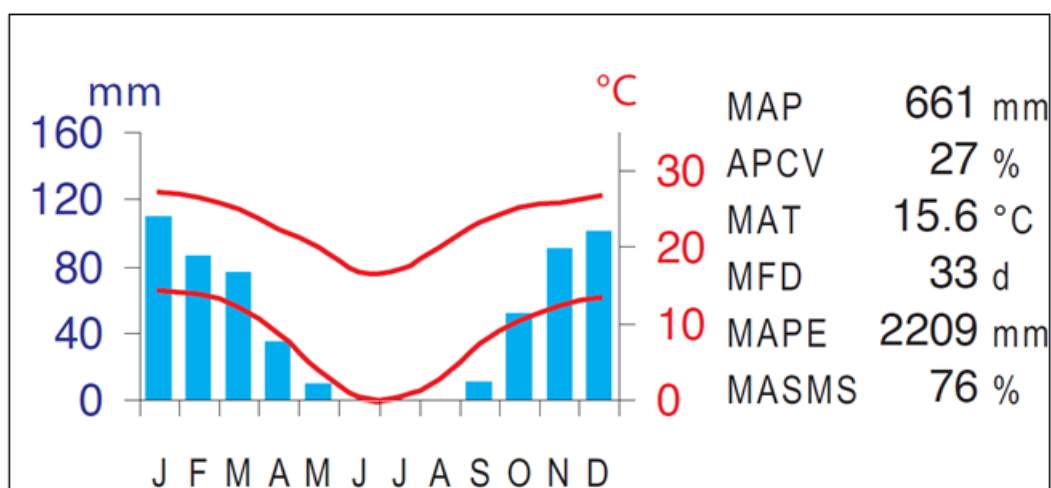
The field survey for the remainder of the Mponeng Lower Compartment TSF area was undertaken on the 3<sup>rd</sup> of July 2025 which constitutes a dry season survey. The seasonality is not considered to be a limiting factor to the assessment and the results of this assessment are considered to be conclusive in the opinion of the specialist.

## 3 Results & Discussion

### 3.1 Desktop Baseline Assessment

#### 3.1.1 Climate

The climate for the Gauteng Shale Mountain bushveld is characterised by a summer rainfall with very dry winters. Mean Annual Precipitation (MAP) ranges between 600 – 750 mm, increasing from west to east as well as with higher elevation. Frost is frequent and, higher in the west and south. For the purpose of this report, Figure 3-1 below summarises the climatic conditions experienced within the vegetation unit at the bioregion level (Mucina & Rutherford, 2006).



**Figure 3-1** Summarised climatic conditions expected to within the proposed study area (Mucina & Rutherford, 2006)

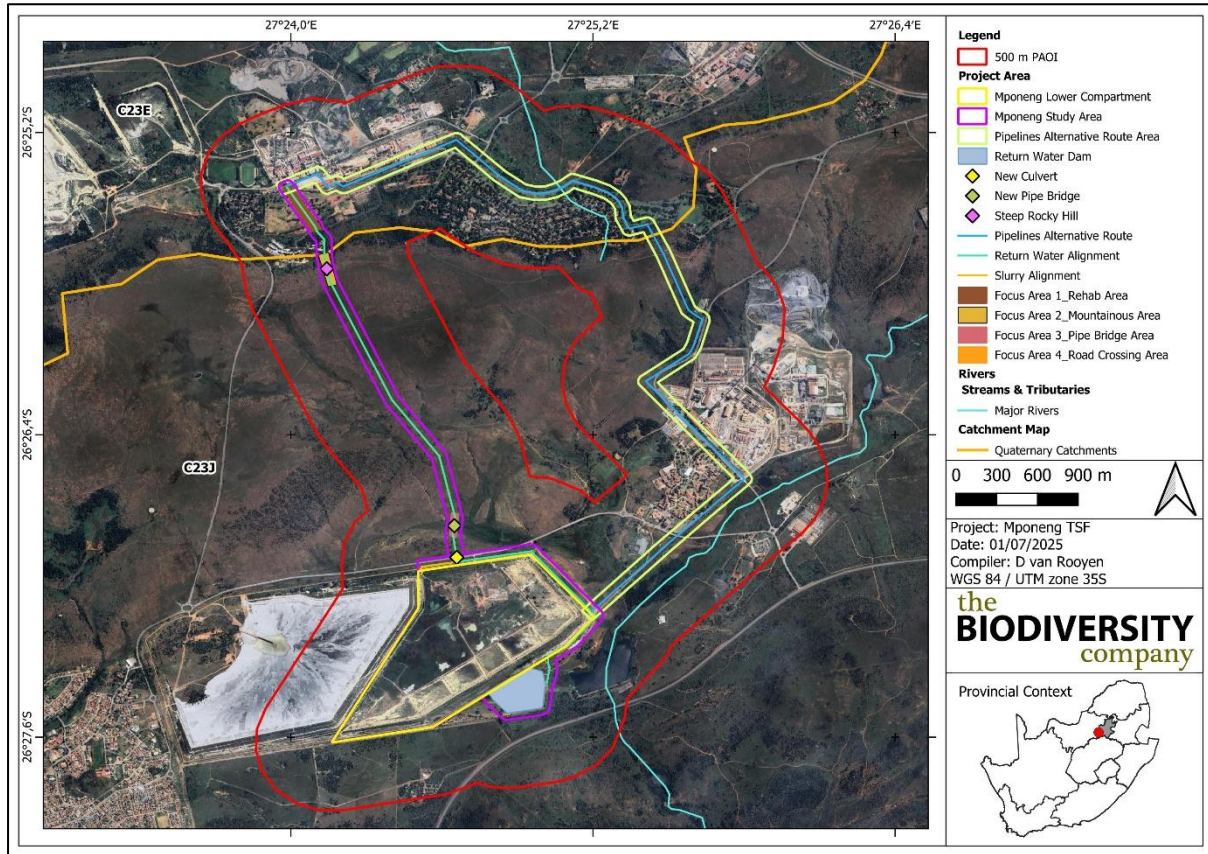
#### 3.1.2 Soils and Geology

The geology of this vegetation type is dominated by shale and some coarser clastic sediments and andesite from the Pretoria Group. Some of the area is characterised by Malmani dolomites of the Chuniespoort Group. The soils are mostly characterised by the shallow Mispah form but are deeper at the foot of the slopes. Land types within this vegetation type is mostly Fb, however, land type Ib does occur in some areas within this vegetation type (Mucina & Rutherford, 2006).

According to the land type database (Land Type Survey Staff, 1972 - 2006), the project area is categorised by the Fb 5 and Fb 15 land types. The Fb land type predominantly features Glenrosa and/or Mispah soil forms, with the potential presence of other soil types interspersed throughout the landscape. These soils are typically calcareous, indicating the widespread presence of lime across the terrain.

### 3.1.3 Hydrological Characteristics

The PAOI falls within the Highveld Ecoregion, within the Vaal-Orange Water Management Area (WMA). At a finer scale, the Mponeng Lower Compartment TSF falls largely within the C23J quaternary catchment as well as partly within the C23E quaternary catchment. The fine scale hydrological features are presented in the following section (Figure 3-2).

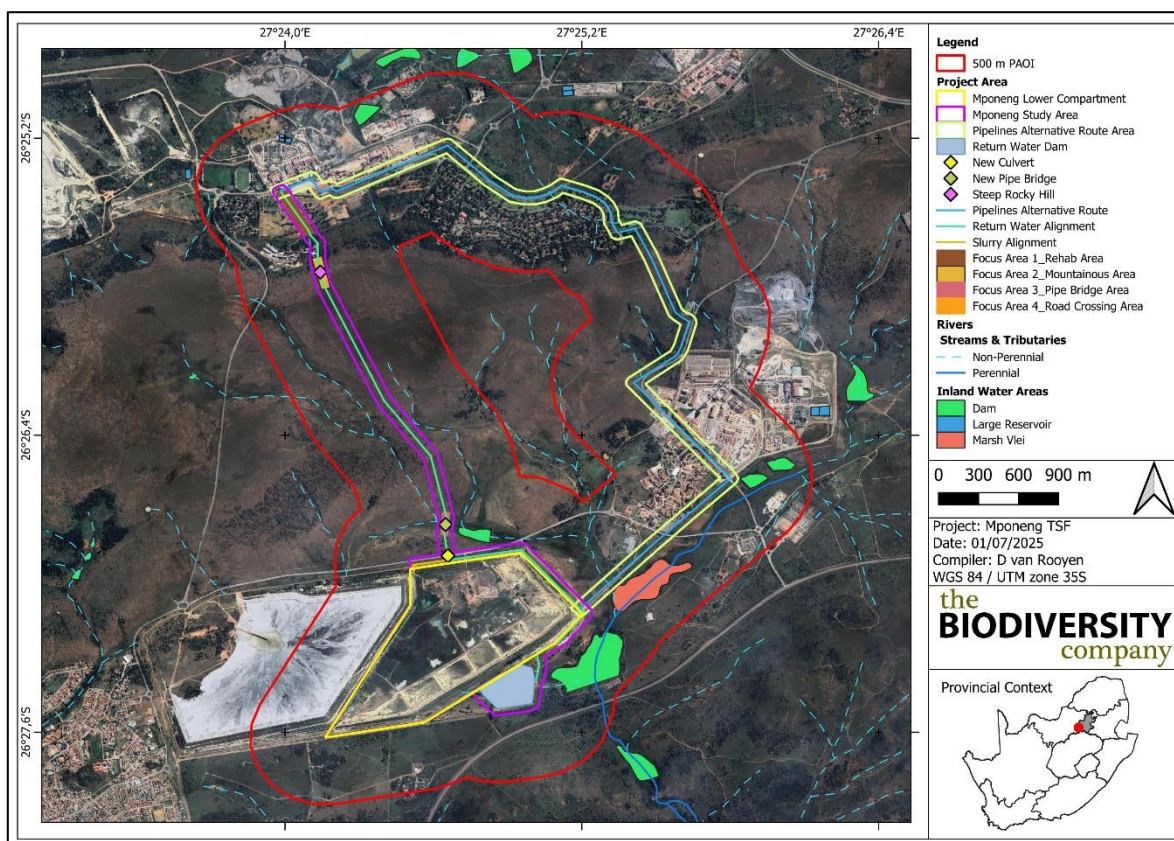


**Figure 3-2** Catchments that overlap with the Project Area of Influence

#### 3.1.3.1 Topographical River Lines and Inland Water Areas

The topographical inland and river line data for the “2627” dataset indicated several inland water areas, which were classified as numerous dams, one marsh vlei and three large reservoirs (Figure 3-3). Furthermore, several topographic non-perennial drainage features were identified within the PAOI, along with one perennial river, the Elandsfonteinspruit.





**Figure 3-3** Topographical inland water areas and river lines that intersect the Project Area of Influence

### 3.1.4 Ecologically Important Landscape Features

The GIS analysis pertaining to the relevance of the proposed project to ecologically important landscape features is summarised in Table 3-1. Only features that were identified to be relevant to the proposed project were further discussed.

**Table 3-1** Summary of relevance of the proposed project to ecologically important landscape features

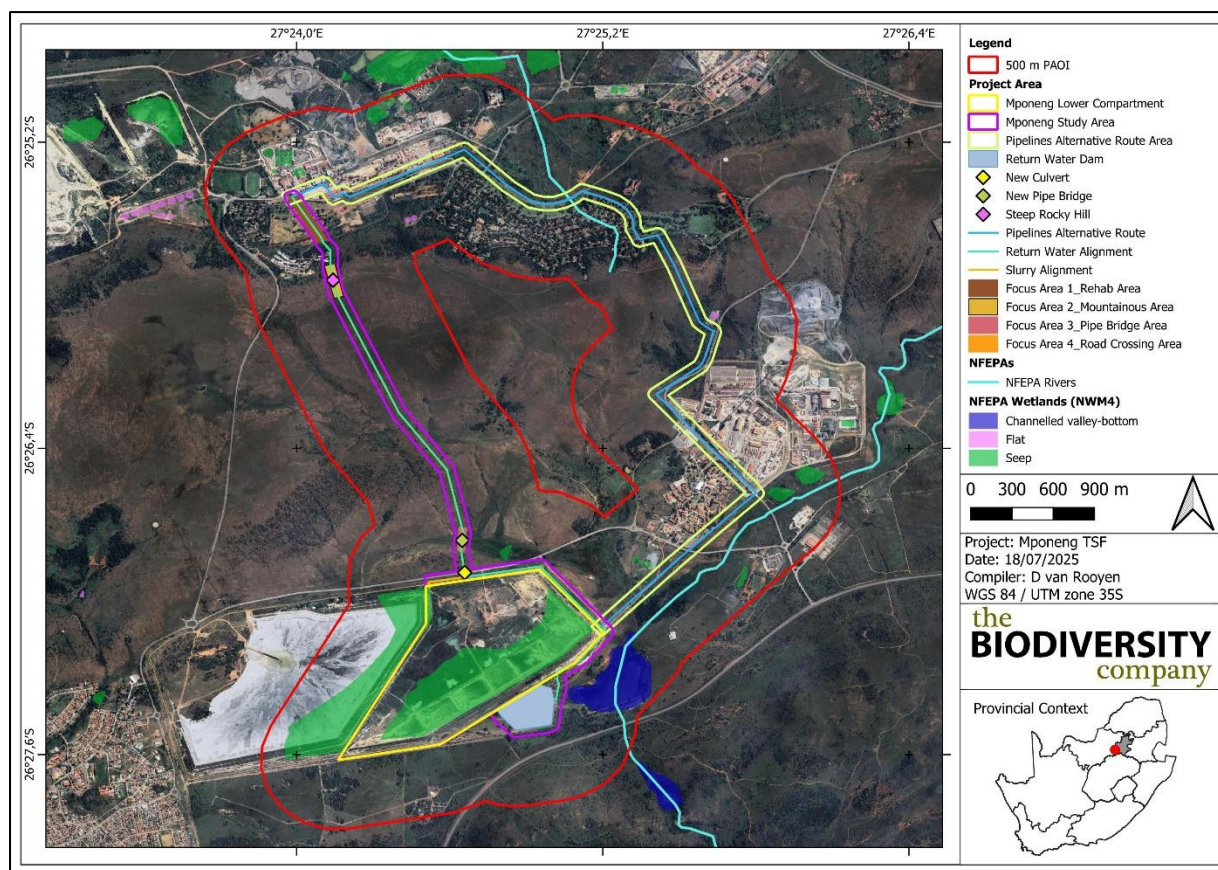
Desktop Information Considered	Relevant/Irrelevant	Section
National Freshwater Priority Area (NFEPA)	Relevant – PAOI overlaps with NFEPA wetlands and rivers.	3.1.4.1
South African Inventory of Inland Aquatic Ecosystems (SIIAE)	Relevant – PAOI overlaps with overlap with SIIAE wetlands and rivers.	3.1.4.2
Provincial Conservation Plan	Relevant – PAOI overlaps with CBA's and ESA's.	3.1.4.3
Strategic Water Source Areas	Irrelevant – PAOI does not overlap with SWSA's.	-

#### 3.1.4.1 National Freshwater Ecosystem Priority Areas

Within the PAOI, several NFEPA features are evident (Figure 3-4). Notably, a channelled valley-bottom wetland, present in the southern portion of the PAOI. This wetland is associated with a network of non-perennial drainage lines and is situated adjacent to the main infrastructure footprint. In addition, several seep wetlands are distributed along the periphery of the PAOI, particularly to the north and east and, several wetland flats were identified within the PAOI. Furthermore, a NFEPA river (Elandsfonteinspruit), traverses the southeastern boundary of the PAOI, providing important ecological connectivity.



According to the dataset, all identified wetlands have been classified as artificial and to have a “Z3 - Heavily to Critically Modified” condition and are classified as “non-priority” systems.



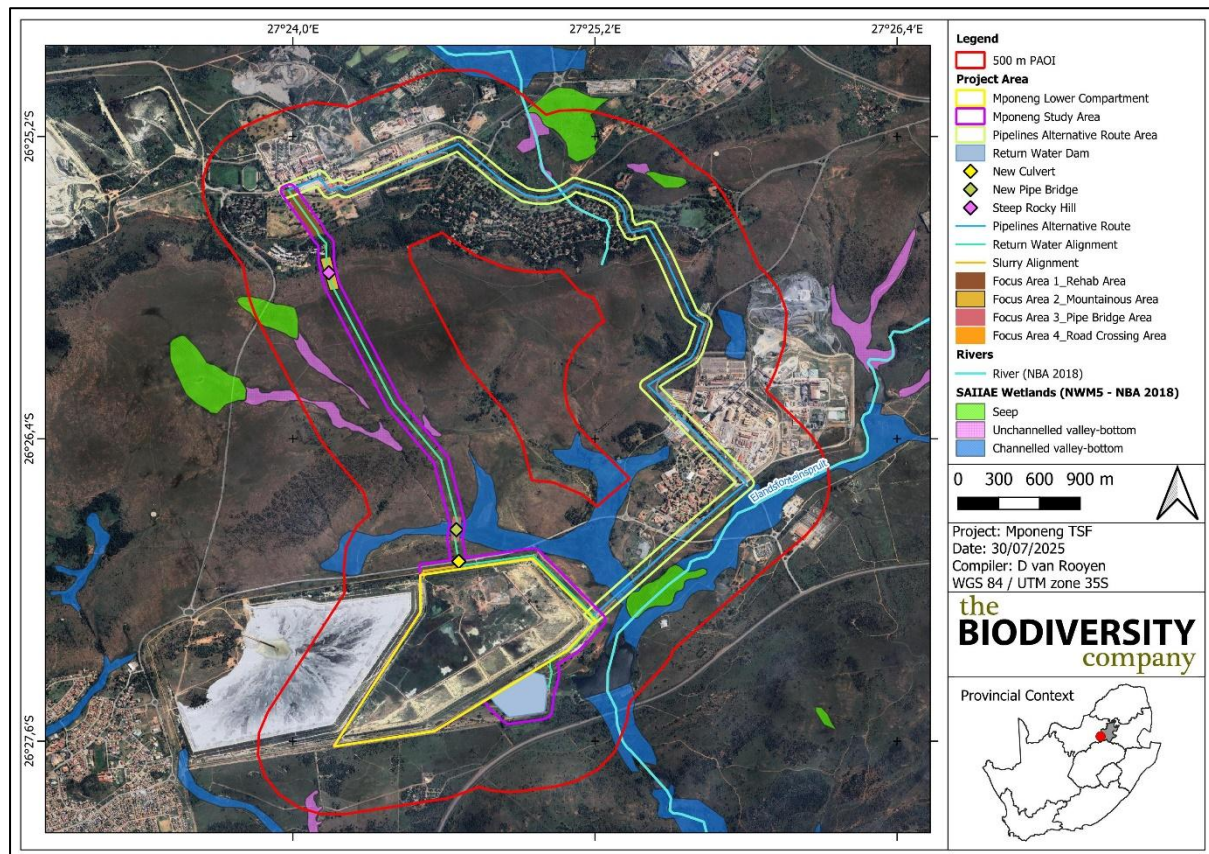
**Figure 3-4** Wetland features identified within the Project Area of Influence according to the National Freshwater Ecosystem Priority Areas dataset

### 3.1.4.2 South African Inland Inventory of Aquatic Systems

Several wetland types are present, including channelled valley-bottom wetlands, unchannelled valley-bottom wetlands, and seep wetlands (Figure 3-5). The channelled valley-bottom wetlands are primarily concentrated along the eastern and southern boundaries of the PAOI, closely associated with the Elandsfontein spruit river, which flows through the southeastern section of the PAOI. Unchannelled valley-bottom wetlands are scattered throughout the mid-western and northern portions of the PAOI, often following natural drainage lines. Seep wetlands are more isolated, occurring in smaller patches along the periphery of the PAOI.

The wetlands have been classified according to the dataset to either have a “A/B – Natural/Largely Natural”, “C – Moderately Modified” or a “D/E/F – Largely/Seriously/Critically Modified” condition. Furthermore, all wetlands are considered to be “Critically Endangered” and “Not Protected” with regard to Ecosystem Threat and Protection Status, respectively.

According to the dataset, the Elandsfontein spruit River is classified as a “Critically Endangered” ecosystem and is considered to be “Poorly Protected”.



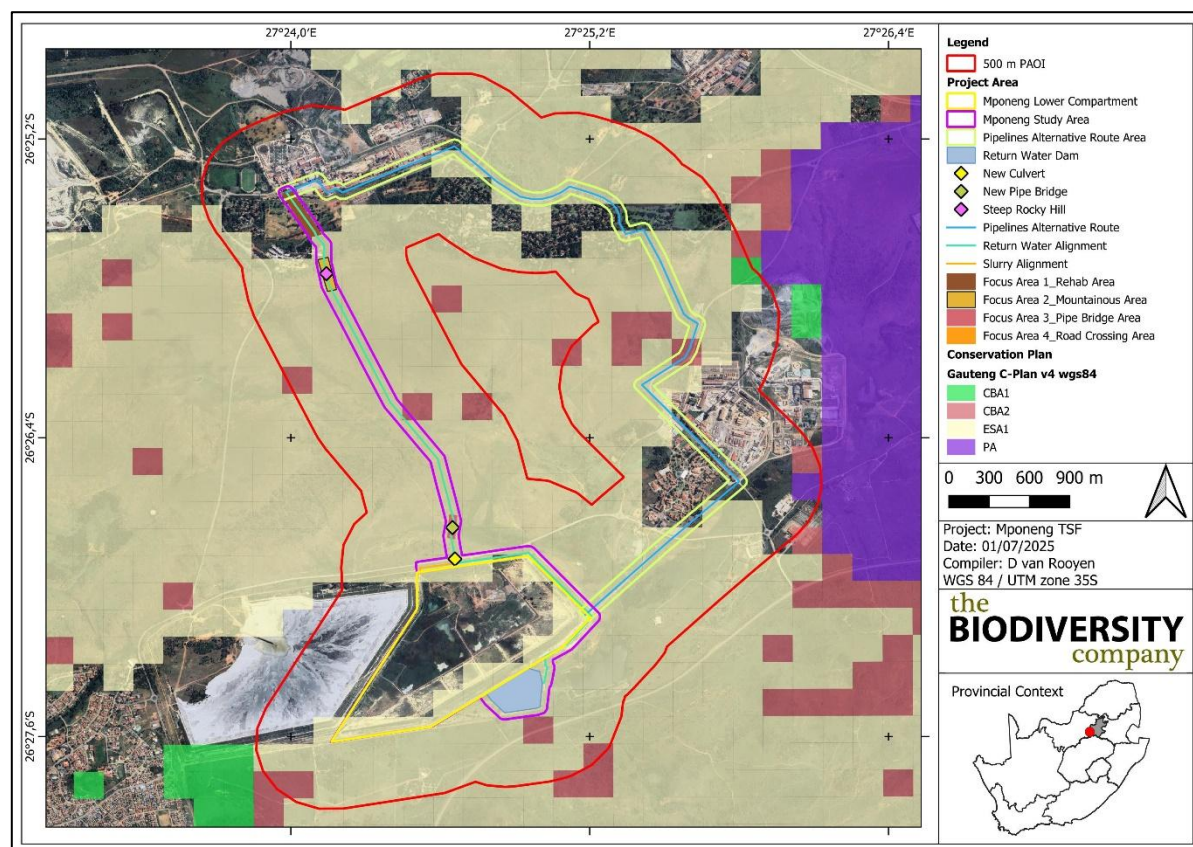
**Figure 3-5** Wetland features identified within the Project Area of Influence according to the South African Inland Inventory of Aquatic Systems dataset

### 3.1.4.3 Gauteng Conservation Plan

According to the Gauteng Conservation Plan for biodiversity (Figure 3-6), the Mponeng PAOI intersects with the following:

- Critical Biodiversity Area's 1;
- Critical Biodiversity Area's 2; and
- Ecological Support Area's 1.





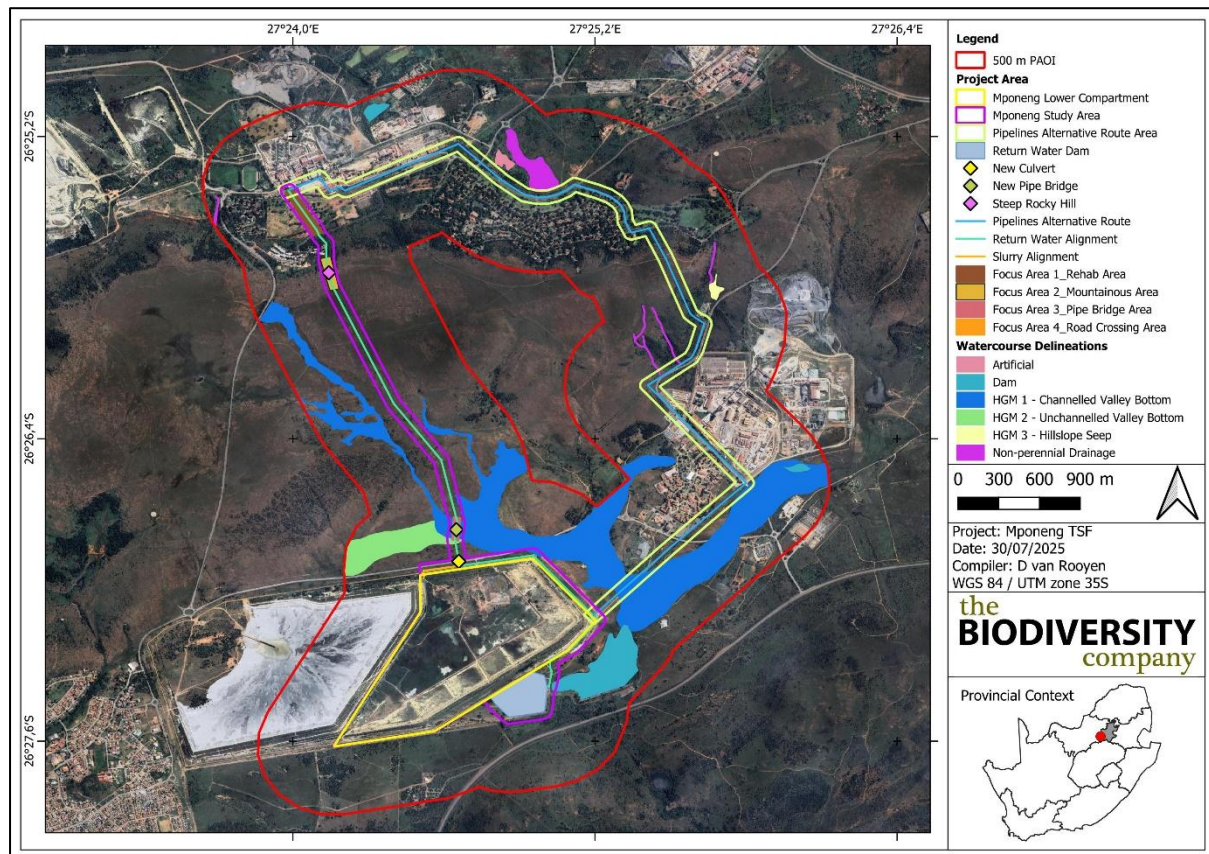
**Figure 3-6** Gauteng Conservation Plan overlaid with the Project Area of Influence

## 3.2 Wetland Field Survey

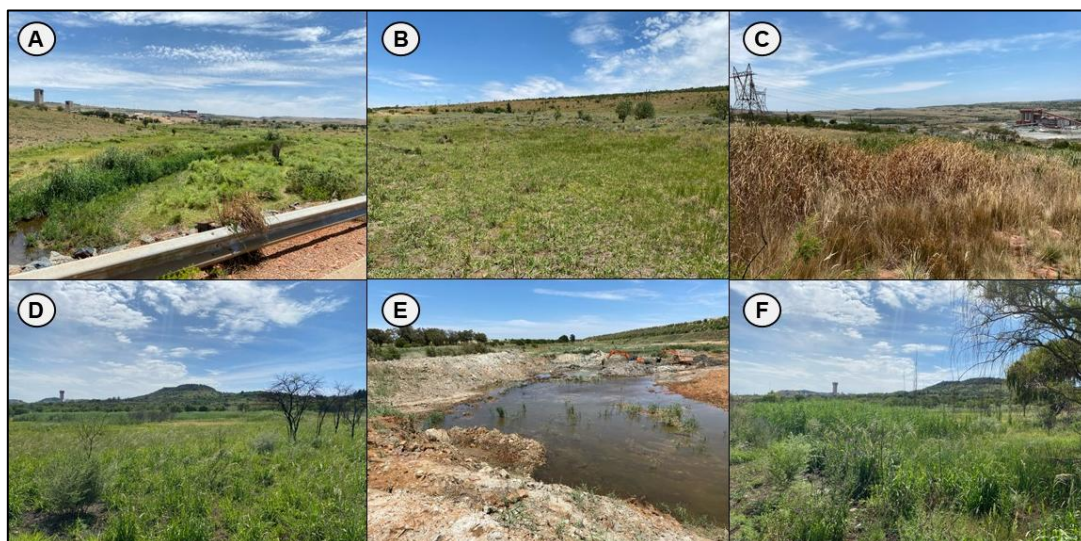
### 3.2.1 Delineation

Three (3) Hydrogeomorphic (HGM) units were identified within the encompassing 500 m Mponeng Lower Compartment TSF PAOI. These were classified as; one (1) channelled valley-bottom, one (1) unchannelled valley-bottom and one (1) Hillslope Seep (Figure 3-7 & Figure 3-8). Several dams were identified within the PAOI, most of which were in-stream features with only one off-channel feature. In addition, several non-perennial drainage features were identified, none of which have any connectivity to a river. A summary of the wetland features is provided in the table below.





**Figure 3-7** Delineation of watercourses within the Mponeng Project Area of Influence



**Figure 3-8** Representative photographs of the various freshwater features within the Mponeng project area. A) Channelled valley-bottom (HGM 1); B) Unchannelled valley-bottom (HGM 2); C) Hillslope Seep (HGM 3); D) Non-perennial Drainage; E) Dam; and F) Artificial



### 3.2.2 Classification and Description

The wetland classification as per SANBI guidelines (Ollis *et al.*, 2013) is presented in Table 3-2.

**Table 3-2 Wetland classification as per SANBI guideline (Ollis *et al.*, 2013)**

Wetland Unit	Level 1	Level 2		Level 3	Level 4		
	System	DWS Ecoregion/s	NFEPA Wet Veg Group/s	Landscape Unit	4A (HGM)	4B	4C
HGM 1					Channelled valley-bottom		
HGM 2	Inland	Highveld	Central Bushveld Group 1	Valley floor	Unchannelled valley-bottom	N/A	N/A
HGM 3				Slope	Seep	Without channelled outflow	

## 4 Conclusion

Three (3) Hydrogeomorphic (HGM) units were identified within the encompassing 500 m Mponeng Lower Compartment TSF PAOI. These were classified as; one (1) channelled valley-bottom, one (1) unchannelled valley-bottom and one (1) Hillslope Seep. Several dams were identified within the PAOI, most of which were in-stream features with only one off-channel feature. In addition, several non-perennial drainage features were identified, none of which have any connectivity to a river.

## 5 References

Department of Water Affairs and Forestry (DWAF). 2005a. A Practical Field Procedure for Identification and Delineation of Wetlands and Riparian Areas.

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Ollis D.J., Snaddon C.D., Job N.M., and Mbona N. 2013. Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland Systems. SANBI Biodiversity Series 22. South African Biodiversity Institute, Pretoria.

Soil Classification Working Group. 2018. Soil Classification A Taxonomic system for South Africa. Pretoria: The Department of Agricultural Development.

## **6 Appendix Items**

### **6.1 Appendix A – Methodology**

#### **6.1.1 Desktop Dataset Assessment**

The desktop assessment was undertaken using Geographic Information System (GIS) to access, view and overlay the latest available related datasets with the project area. The information represented within the datasets was used to develop the relevant digital maps used to identify potentially environmentally sensitive areas. These datasets and their respective dates of publishing are provided below:

- Vegetation Types - Vegetation Map of South Africa, Lesotho and Swaziland (SANBI, 2018 & Mucina and Rutherford 2006);
- Soils and Geology - Land Types Database (Land Type Survey Staff, 1972 - 2006); and
- Topographical Inland Water Areas and River Lines (based on the 1994 1:500 000 topographic maps as per the Chief Directorate of the National Geo-spatial Information).

##### **6.1.1.1 Vegetation Types - Vegetation Map of South Africa, Lesotho and Swaziland**

The Vegetation Map of South Africa, Lesotho and Swaziland (SANBI, 2018) is the latest and updated version of the maps published in earlier time such as those presented by Mucina and Rutherford (2006) and those presented in the National Biodiversity Assessment (2011). The map provides spatial details on the representative vegetation of South Africa and is complemented in this report using information from Strelitzia (Mucina & Rutherford, 2006) to provide insight on the landscape features, biogeography, climate, geology, and soils of the project area.

##### **6.1.1.2 Soils and Geology - Land Type Database**

The Land Type Survey provides information on the soils, terrain, climate, and geology of areas within South Africa. The data includes the pedological classification of soils and is used in this report to provide insight on the common soil forms associated with aquatic or freshwater systems of a particular area.

##### **6.1.1.3 Topographical River Lines and Inland Water Areas**

Topographical Inland Water Areas and River Lines for South Africa are based on the topographic maps dated 1994 as per the National Geo-spatial Information. These datasets are used in this report to provide insight on potential wetland areas and serves to highlight the location and extent of drainage features, dams, wetlands, reservoirs and other relevant inland waterbodies.

##### **6.1.1.4 Ecologically Important Landscape Features**

The datasets listed below were incorporated to establish the relation between the project and ecologically important or sensitive freshwater entities. Emphasis was placed around the following spatial datasets:

- South African Inventory of Inland Aquatic Ecosystems (SAIIAE), NBA 2018 Rivers and Wetlands (Van Deventer *et al.*, 2019);
- National Freshwater Priority Areas, Rivers and Wetlands, 2011 (Nel *et al.*, 2011); and
- Gauteng C-Plan v3.3 (GDARD, 2014).

#### **6.1.1.4.1 The South African Inventory of Inland Aquatic Ecosystems**

The South African Inventory of Inland Aquatic Ecosystems (SAIIAE) was established during the 2018 NBA, the SAIIAE is a collection of spatial data layers that represent the extent of river and inland wetland ecosystem types as well as the pressures on these systems. The same two headline indicators, and their associated categorisations, are applied as with the terrestrial ecosystem NBA, namely Ecosystem Threat Status and Ecosystem Protection Level. The Ecosystem Threat Status of river and wetland ecosystem types are based on the extent to which each ecosystem type had been altered from its natural condition.

#### **6.1.1.4.2 National Freshwater Ecosystem Priority Areas, Rivers and Wetlands**

In an attempt to better conserve aquatic ecosystems, South Africa has categorised its inland aquatic systems according to set ecological criteria (i.e., ecosystem representation, water yield, connectivity, unique features, and threatened taxa) to identify Freshwater Ecosystem Priority Areas (FEPAs). The FEPAs are intended to be conservation support tools and it is envisioned that they will guide the effective implementation of measures to achieve the National Environment Management: Biodiversity Act's biodiversity conservation goals (Nel *et al.*, 2011).

#### **6.1.1.4.3 Gauteng C-Plan v3.3**

The final spatial outcome of the systematic conservation planning process (ie. The Gauteng C-Plan) is a map that delineates biodiversity priority areas for conservation and sustainable land use management. The map, which is commonly referred to as a Critical Biodiversity Areas or CBA Map, identifies biodiversity priority areas in a number of major categories (GDARD, 2014):

- Protected Areas;
- Critical Biodiversity Areas; and
- Ecological Support Areas

### **6.1.2 Wetland Field Survey**

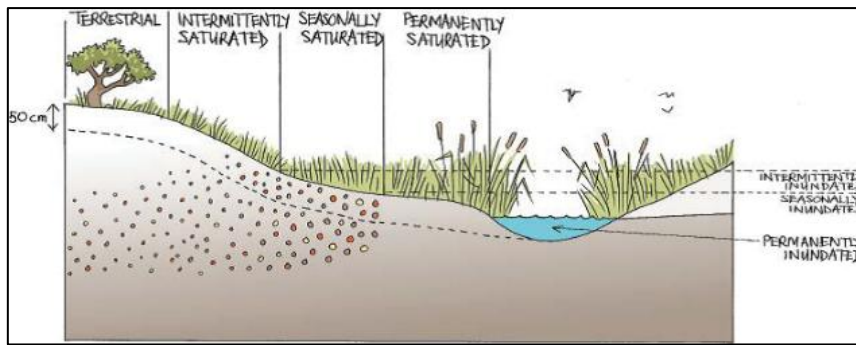
#### **6.1.2.1 Identification and Mapping**

The wetland areas were delineated in accordance with the DWAF (2005) guidelines, a cross section is presented in Figure 6-1. The outer edges of the wetland areas were identified by considering the following four specific indicators:

- The Terrain Unit Indicator helps to identify those parts of the landscape where wetlands are more likely to occur;
- The Soil Form Indicator identifies the soil forms, as defined by the Soil Classification Working Group (1991), which are associated with prolonged and frequent saturation.
- The soil forms (types of soil) found in the landscape were identified using the South African soil classification system namely; Soil Classification: A Taxonomic System for South Africa (Soil Classification Working Group, 1991);
- The Soil Wetness Indicator identifies the morphological "signatures" developed in the soil profile as a result of prolonged and frequent saturation; and
- The Vegetation Indicator identifies hydrophilic vegetation associated with frequently saturated soils.



Vegetation is used as the primary wetland indicator. However, in practise the soil wetness indicator tends to be the most important, and the other three indicators are used in a confirmatory role.



**Figure 6-1** Cross section of a wetland, indicating how the soil wetness and vegetation indicators respond to changes in topography (Ollis et al. 2013)

#### 6.1.2.2 Delineation

The wetland indicators described above are used to determine the boundaries of the wetlands within the project area. These delineations are then illustrated by means of maps accompanied by descriptions.

#### 6.1.2.3 Classification and Description

The National Wetland Classification Systems (NWCS) developed by the South African National Biodiversity Institute (SANBI) will be considered for this study. This system comprises a hierarchical classification process of defining a wetland based on the principles of the hydrogeomorphic (HGM) approach at higher levels, and then also includes structural features at the lower levels of classification (Ollis et al., 2013).

## 6.2 Appendix B – Specialist Declaration of Independence

### Declaration

I, Divan van Rooyen, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.



Divan van Rooyen

Freshwater Ecologist

The Biodiversity Company

July 2025

### Declaration

I, Khume Mtshweni, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.



Khume Mtshweni

Ecologist

The Biodiversity Company

July 2025

### Declaration

I, Namitha Singh, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.



Namitha Singh

Ecologist

The Biodiversity Company

July 2025



## 6.3 Appendix C – Specialist CVs

### Divan van Rooyen

Ph.D. Environmental Science

Pri Sci Nat (151272)

Cell: +27 83 265 8776

Email: [divan@thebiodiversitycompany.com](mailto:divan@thebiodiversitycompany.com)

Identity Number: 9312205072085

Date of birth: 20 December 1993



Profile Summary	Key Experience	Nationality
Working experience throughout Southern Africa	<ul style="list-style-type: none"> <li>Environmental Impact Assessments (EIA)</li> </ul>	South African
Specialist experience with mining, WWTW's and construction.	<ul style="list-style-type: none"> <li>Environmental Management Programmes (EMP)</li> </ul>	<b>Languages</b>
Specialist expertise include wetlands resources, aquatic ecology and ecotoxicology.	<ul style="list-style-type: none"> <li>Wetland delineations and ecological assessments</li> </ul>	English – Proficient
	<ul style="list-style-type: none"> <li>Rehabilitation Plans and Monitoring</li> </ul>	Afrikaans – Proficient
	<ul style="list-style-type: none"> <li>Aquatic biomonitoring</li> </ul>	<b>Qualifications</b>
<b>Areas of Interest</b>	<b>Country Experience</b>	<ul style="list-style-type: none"> <li>PhD (North-West University of Potchefstroom) – Environmental Science with Aquatic Ecosystem Health</li> </ul>
Mining, Seismic Surveys, Renewable Energy, Bulk Services Infrastructure Development & WWTW's.	South Africa	<ul style="list-style-type: none"> <li>MSc (North-West University of Potchefstroom) – Environmental Science (Ecological Remediation and Sustainable Management)</li> <li>BSc Honours (North-West University of Potchefstroom) – Environmental Science with Ecological Remediation and Sustainable Management</li> <li>BSc Environmental sciences</li> <li>Pri Sci Nat (151272)</li> </ul>

## Khume Mtshweni

M.Sc. Aquatic Health (*Pr Sci Nat*)

Cell: +27 63 772 7501

Email: [khume@thebiodiversitycompany.com](mailto:khume@thebiodiversitycompany.com)

Identity Number: 9408065020089

Date of birth: 06 August 1994



### Profile Summary

Working experience throughout South Africa.

Specialist experience in prospecting, mining, agriculture, private sector and renewable energy.

Experience with faunal and floral permit applications and public participation.

Specialist expertise include Freshwater and Terrestrial Ecology.

### Areas of Interest

Wetland ecology.

Biological Carbon Sequestration.

Project management.

### Key Experience

- Surface and Ground water biomonitoring
- Environmental Management Programmes (EMP)
- Wetland delineations and ecological assessments
- Rehabilitation Plans and Monitoring
- Faunal and Floral assessments
- The use of macroinvertebrates and sediment to determine water quality
- Aquatic Ecological Assessments

### Country Experience

South Africa  
Angola

### Nationality

South African

### Languages

English – Proficient  
Afrikaans – Proficient  
Sepedi – Proficient  
IsiNdebele – Proficient  
Isizulu – Proficient  
Siswati – Conversational  
Sesotho – Proficient  
Setswana – Proficient  
Tsonga - Conversational

### Qualifications

- MSc (University of Johannesburg) – Aquatic Health.
- BSc Honours (University of Johannesburg) – Zoology
- BSc Environmental Sciences
- Pr Sci Nat (138592)
- Certificate of Competence: Wetland introduction and Delineation course
- Certificate of Competence: Wetland Legislation and Rehab Course

## Namitha Singh

BSc. (Hons) Environmental Science  
(Pr Sci Nat 157927)

Cell: +27 63 684 1752

Email: [namitha@thebiodiversitycompany.com](mailto:namitha@thebiodiversitycompany.com)

Identity Number: 9509260335089

Date of birth: 26 September 1995



### Profile Summary

Working experience in South Africa.

Specialist experience within construction and development (residential/commercial/mixed-use/solar), wastewater infrastructure and agriculture.

Specialist expertise includes wetland resource management and rehabilitation, estuary and coastal management and, hydroponology.

### Areas of Interest

Water Resource Management, Mining, Renewable Energy, Infrastructure Development, Agriculture, Land contamination, Sustainability and Conservation.

### Key Experience

- Wetland Delineation and Functional Assessments
- Hydroponology Assessments
- Wetland Rehabilitation
- Coastal and Estuarine Assessments

### Country Experience

South Africa

### Nationality

South African

### Languages

English – Proficient

Afrikaans – Basic

### Qualifications

- Pr. Sci. Nat. 157 927
- BSc. Honours – Environmental Science (*Cum Laude*)
- BSc. Environmental Science and Life Science