



THE AQUATIC BIODIVERSITY COMPLIANCE STATEMENT FOR THE PROPOSED RUIGTEVLEY QUARRY PROJECT

**Thabazimbi Local Municipality, Waterberg District
Municipality, Limpopo Province, South Africa**

27/09/2024

Prepared by:

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Report Name	THE AQUATIC BIODIVERSITY COMPLIANCE STATEMENT FOR THE PROPOSED RUIGTEVLEY QUARRY PROJECT	
Specialist Theme	Aquatic Biodiversity Theme – Compliance Statement	
Project Reference	Ruigtevley Quarry	
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Environmental Assessment Practitioner		
Fieldwork & Report Contributor	Rian Pienaar (SACNASP Pr. Sci. Nat. 135544)	
Report Writer / Reviewer	Andrew Husted (SACNASP 400213/11)	
Declaration	<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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1 Introduction

1.1 Background

The Biodiversity Company was appointed to undertake an aquatic biodiversity baseline and impact assessment for the Ruigtevley Quarry Project near Thabazimbi, Limpopo Province. The assessment area, which included the proposed Mining Permit Area, and the Stockpile Areas will be referred to as the Project Area of Influence (PAOI) for reporting purposes. A map presenting the regional context of the PAOI can be seen in Figure 1-1 and a map presenting the PAOI can be seen in Figure 1-2.

To determine the baseline ecological state of the area and to present a detailed description of the receiving environment, both a desktop assessment, as well as a field survey on the 26th of September 2024, were conducted. Furthermore, the desktop assessment and field survey both involved the detection, identification and description of any locally relevant sensitive receptors and habitats. The manner in which these sensitive features may be affected by the proposed development was also investigated.

This assessment was conducted in accordance with the amendments to the Environmental Impact Assessment Regulations, 2014 (No. 326, 7 April 2017) of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998). The approach has taken cognisance of the recently published Government Notice 320 in terms of NEMA dated 20 March 2020 as well as the Government Notice 1150 in terms of NEMA dated 30 October 2020: “Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation”. The National Web based Environmental Screening Tool has characterised the aquatic biodiversity theme for the area as ‘Low’ sensitivity (National Environmental Screening Tool, 2024) (Figure 1-3).

The purpose of conducting the specialist study is to provide relevant input into the Environmental Authorisation application process, with a focus on the proposed activities and their impacts associated with the project. This report, after taking into consideration the findings and recommendations provided by the specialist herein, should inform and guide the Registered Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making as to the ecological viability of the proposed project.

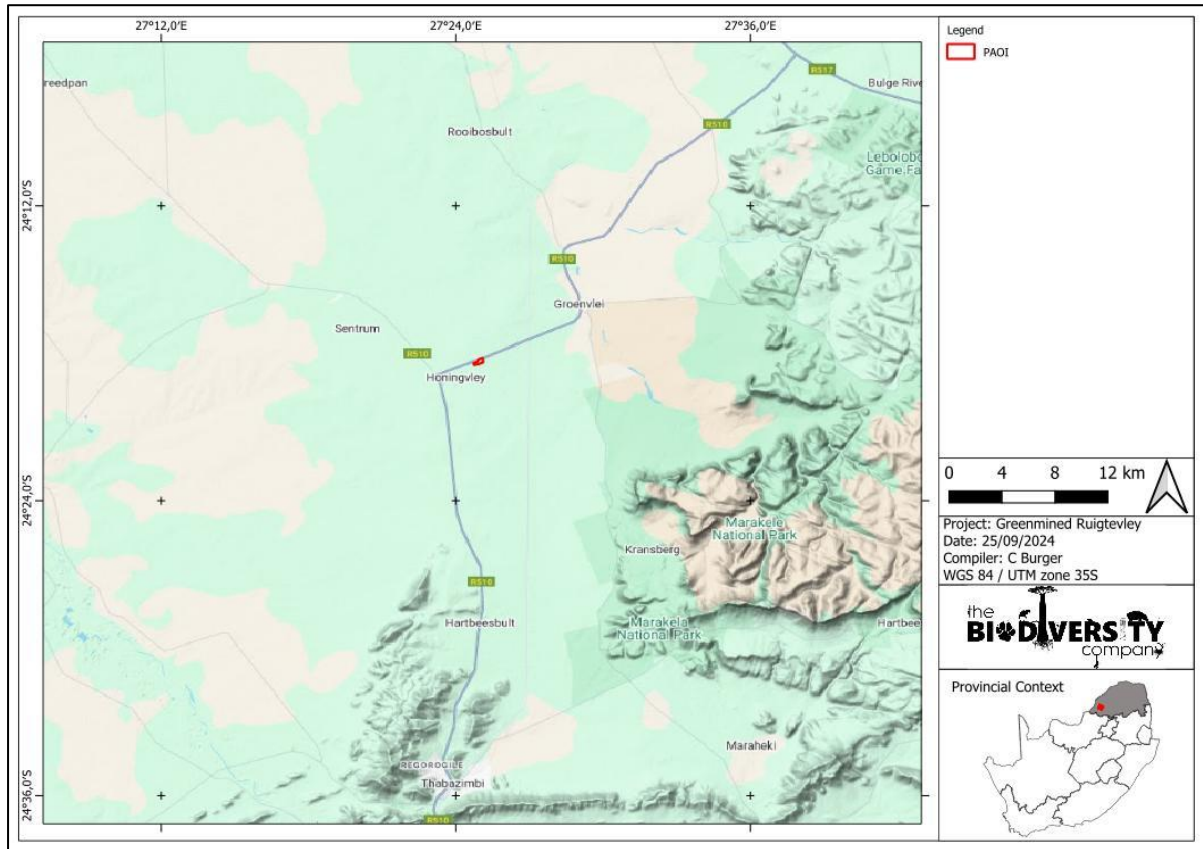


Figure 1-1 Map illustrating the regional context of the PAOI



Figure 1-2 Map illustrating the Project Area of Influence (PAOI)

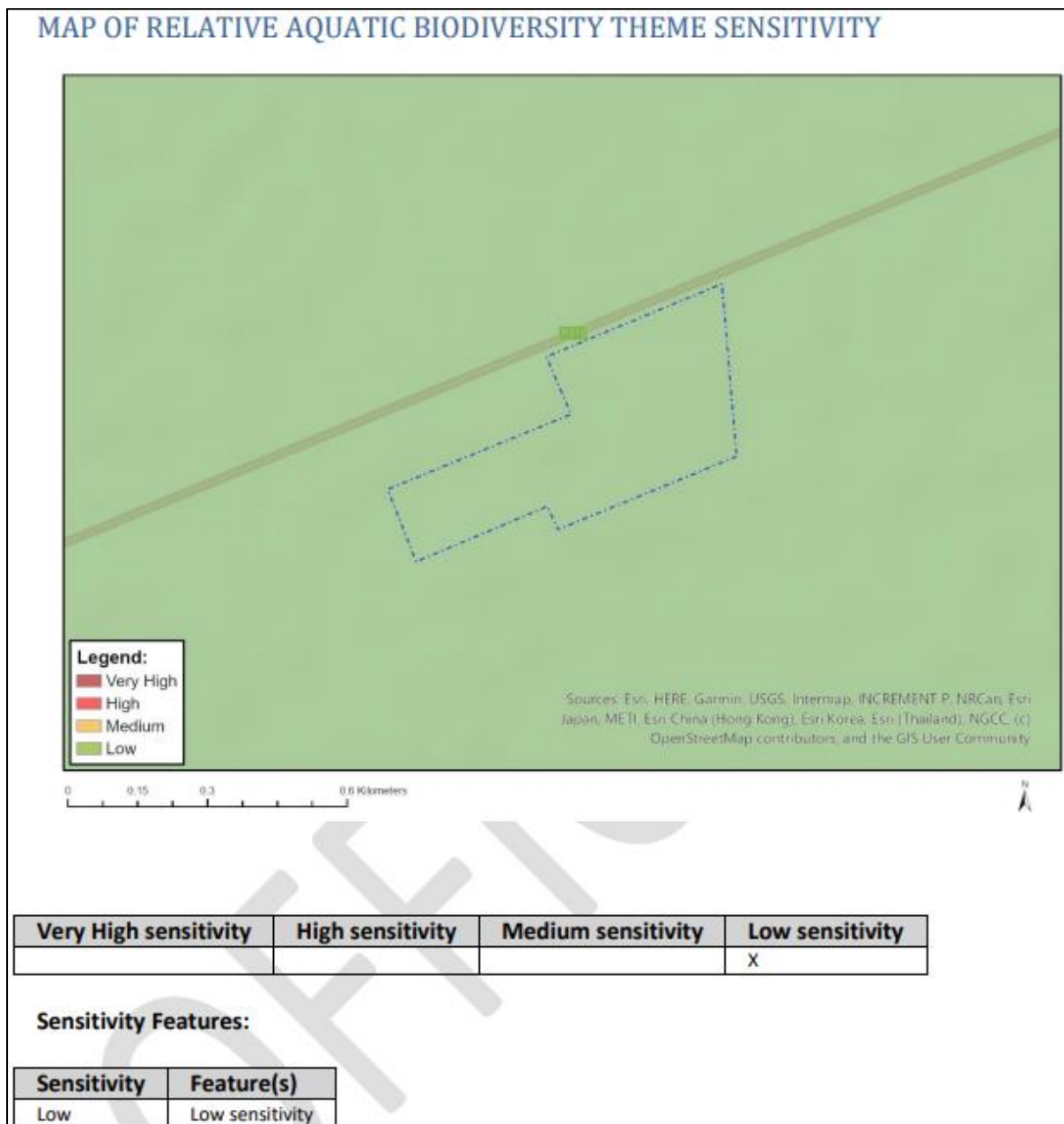


Figure 1-3 The aquatic biodiversity theme sensitivity

1.2 Project Description

The following information is as provided by Greenmined (2024):

Inzalo Crushing and Aggregates (Pty) Ltd (hereinafter referred to as “the Applicant”) intends to apply for a mining permit to mine stone aggregate/ gravel on a portion of Portion 1 of Farm Ruigtevley 97 KQ, Thabazimbi Local Municipality, Limpopo Province.

The proposed mining footprint will be 4.9 ha and will be developed over an undisturbed area of the farm. The mining method will make use of blasting in order to loosen the hard rock; the material will then be loaded and hauled to the crushing plant where it will be screened to various-sized stockpiles. The aggregate will be stockpiled until it is transported from the site using tipper trucks. All mining-related activities will be contained within the approved mining permit boundaries.

The proposed mining area is approximately 4.9 ha in extent and the applicant, Inzalo Crushing and Aggregates (Pty) Ltd, intends to win material from the area for at least 2 years, with a possible extension of another 3 years. The aggregate to be removed from the quarry will be used for local construction and building projects in the vicinity. The proposed quarry will therefore contribute to the upgrading/maintenance of road infrastructure and building contracts in and around the surrounding areas.

The mining activities will consist of the following:

- Stripping and stockpiling of topsoil;
- Blasting;
- Excavating;
- Crushing;
- Stockpiling and transporting;
- Sloping and landscaping upon closure of the site; and
- Replacing the topsoil and re-vegetation of the disturbed area.

The mining site will contain the following:

- Drilling equipment;
- Excavating equipment;
- Earth-moving equipment;
- Static crushing and screening plants; and
- Access roads.

1.3 Alternatives Assessment

No alternative sites were provided at this stage of the project. The assessed area is taken as the preferred site for the proposed development.

1.4 Legislative Framework

In line with the protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity, as per Government Notice 320 published in terms of NEMA, dated 20 March 2020: "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation" – the following has been assumed:

- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified on the screening tool as being of:
 - "Low sensitivity" for aquatic biodiversity, must submit an Aquatic Biodiversity Compliance Statement.

An Aquatic Biodiversity Compliance Statement must contain the information as presented in Table 1-1 below.

Table 1-1 Aquatic Biodiversity Compliance Statement information requirements as per the relevant protocol, including the location of the information within this report

Information to be Included (as per GN 320, 20 March 2020)	Report Section
contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae	7.2
a signed statement of independence by the specialist	7.1
a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment	2.8
a baseline profile description of biodiversity and ecosystems of the site	3
the methodology used to verify the sensitivities of the aquatic biodiversity features on the site including the equipment and modelling used where relevant;	2
in the case of a linear activity, confirmation from the aquatic biodiversity specialist that, in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase	-
where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr	-
a description of the assumptions made as well as any uncertainties or gaps in knowledge or data	2.8
any conditions to which this statement is subjected	5.2

A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

2 Methodology

A site visit was conducted on the 26th of September 2024, which is considered an early-wet season survey. The seasonality is not considered to be a limiting factor for this assessment.

2.1 Identification and Mapping

The wetland areas were delineated in accordance with the DWAF (2005) guidelines, a cross section is presented in Figure 2-1. 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 practice the soil wetness indicator tends to be the most important, and the other three indicators are used in a confirmatory role.

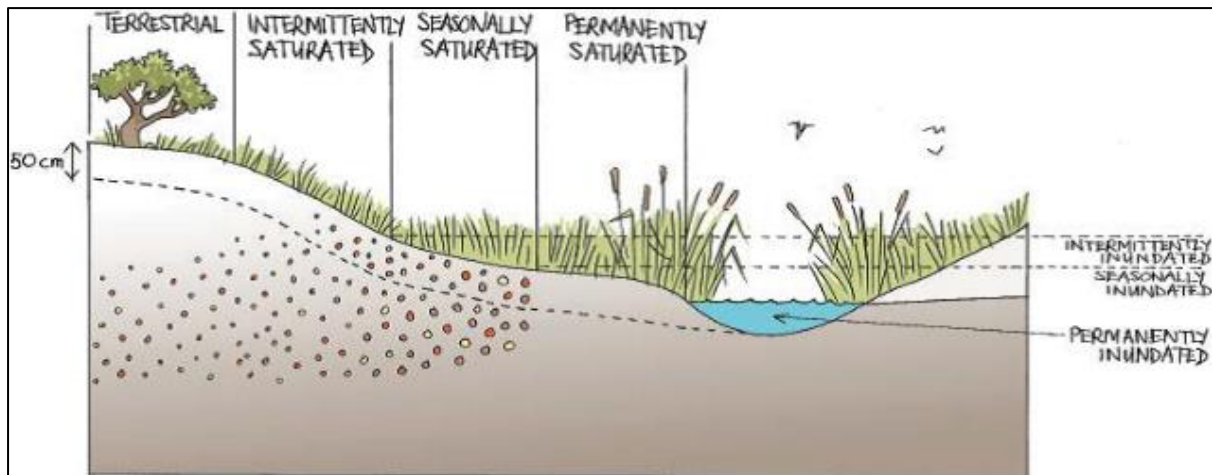


Figure 2-1 Cross section through a wetland, indicating how the soil wetness and vegetation indicators change (Ollis et al. 2013)

The DWAF (2005) manual separates the classification of watercourses into three (3) separate types of channels or sections defined by their position relative to the zone of saturation in the riparian area (Figure 2-1). The classification system separates channels into:

- those that do not have baseflow ('A' Sections);
- those that sometimes have baseflow ('B' Sections) or non-perennial; or
- those that always have baseflow ('C' Sections) or perennial.

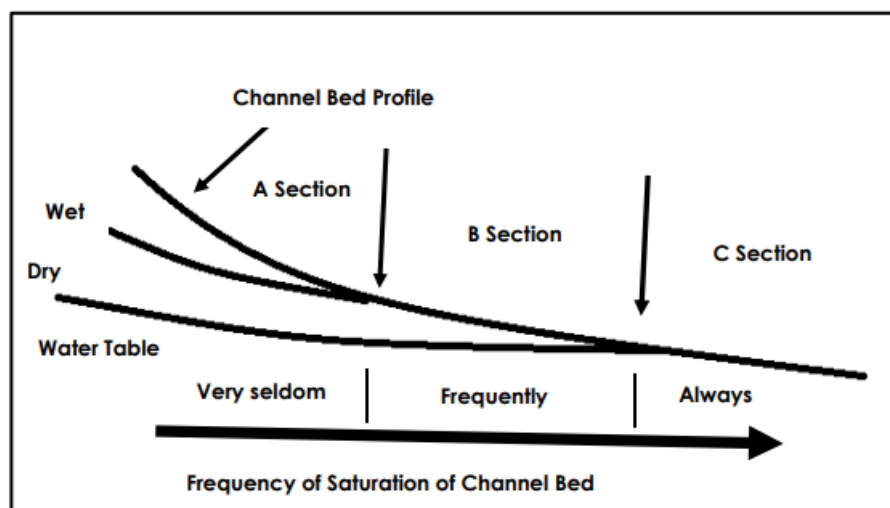


Figure 2-2 The watercourse classifications (DWAF, 2005)

2.2 Ecological 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).

2.3 Functional Assessment

Wetland Functionality refers to the ability of wetlands to provide healthy conditions for the wide variety of organisms found in wetlands as well as humans. Ecosystem services serves as the main factor contributing to wetland functionality.

The assessment of the ecosystem services supplied by the identified wetlands was conducted per the guidelines as described in WET-EcoServices (Kotze *et al.*, 2008). An assessment was undertaken that examines and rates the following services according to their degree of importance and the degree to which the services are provided (Table 2-1).

Table 2-1 *Classes for determining the likely extent to which a benefit is being supplied*

Score	Rating of likely extent to which a benefit is being supplied
< 0.5	Low
0.6 - 1.2	Moderately Low
1.3 - 2.0	Intermediate
2.1 - 3.0	Moderately High
> 3.0	High

2.4 Present Ecological Status

The overall approach is to quantify the impacts of human activity or clearly visible impacts on wetland health, and then to convert the impact scores to a Present Ecological Status (PES) score. This takes the form of assessing the spatial extent of impact of individual activities/occurrences and then separately assessing the intensity of impact of each activity in the affected area. The extent and intensity are then combined to determine an overall magnitude of impact. The Present State categories are provided in Table 2-2.

Table 2-2 *The Present Ecological Status categories (Macfarlane et al., 2008)*

Impact Category	Description	Impact Score Range	PES
None	Unmodified, natural	0 to 0.9	A
Small	Largely Natural with few modifications. A slight change in ecosystem processes is discernible and a small loss of natural habitats and biota may have taken place.	1.0 to 1.9	B
Moderate	Moderately Modified. A moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.	2.0 to 3.9	C
Large	Largely Modified. A large change in ecosystem processes and loss of natural habitat and biota has occurred.	4.0 to 5.9	D
Serious	Seriously Modified. The change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable.	6.0 to 7.9	E
Critical	Critical Modification. The modifications have reached a critical level and the ecosystem processes have been modified completely with an almost complete loss of natural habitat and biota.	8.0 to 10	F

2.5 Ecological Importance and Sensitivity

The Ecological Importance and Sensitivity of water resources is determined to establish resources that provide higher than average ecosystem services, biodiversity support functions or are particularly sensitive to impacts. The mean of the determinants is used to assign the Importance and Sensitivity (IS) category as listed in Table 2-3.

Table 2-3 Description of Importance and Sensitivity categories

IS Category	Range of Mean	Recommended Ecological Management Class
Very High	3.1 to 4.0	A
High	2.1 to 3.0	B
Moderate	1.1 to 2.0	C
Low Marginal	< 1.0	D

2.6 Recommended Ecological Category and Recommended Management Objective

The Recommended Ecological Category (REC) and Recommended Management Objective (RMO) was determined based on the results obtained from the PES and ecological EIS of the assessed wetlands, with the objective of recommending how a water resource should be managed. This is achieved by either maintaining or improving the ecological integrity of the wetland in order to ensure continued ecological functionality (DWA, 1999).

Table 2-4 Recommended Ecological Category (REC) and Recommended management objectives (RMO) scores

		Ecological Importance and Sensitivity				
		Very High	High	Moderate	Low	
PES	A	Pristine	A Maintain	A Maintain	A Maintain	A Maintain
	B	Natural	A Improve	A/B Improve	B Maintain	B Maintain
	C	Good	A Improve	B/C Improve	C Maintain	C Maintain
	D	Fair	C Improve	C/D Improve	D Maintain	D Maintain
	E/F	Poor	D Improve	E/F Improve	E/F Maintain	E/F Maintain

2.7 Buffer Requirements

The “Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries” (Macfarlane et al., 2014) was used to determine the appropriate buffer zone for the proposed activity.

2.8 Assumptions and Limitations

The following limitations should be noted for the assessment:

- The assessment area was based on the spatial file provided by the client and any alterations to the development area may affect the results;
- Ground truthing was restricted to the PAOI; and
- The seasonality of the site survey is not considered to be a limiting factor for this project.

3 Receiving Environment

3.1 Ecologically Important Landscape Features

Table 3-1 below has been produced as a result of the spatial data collected and analysed as provided by relevant sources. It presents a summative breakdown of the ecological boundaries considered and the associated relevance that each has to the region or PAOI.

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

Desktop Information Considered	Relevance	Reasoning
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	Irrelevant	The PAOI and its 500 m regulated area does not overlap with any SAIIAE wetlands
National Freshwater Priority Area	Irrelevant	The PAOI and its 500 m regulated area does not overlap with any NFEPA wetlands
Strategic Water Source Area (SWSA)	Irrelevant	Does not overlap with any relevant areas

3.2 Survey Results

A single season field survey was undertaken on the 26th of September 2024, which constitutes an early wet season survey (however conditions on site were still very dry), to determine the presence of any wetland systems. This site visit is considered sufficient for the project (Figure 3-1).

No wetlands were identified for the project.



Figure 3-1 Map illustrating the field tracks of the field survey

3.3 Ecological Sensitivity

The National Web based Environmental Screening Tool has characterised the aquatic theme sensitivity of the PAOI as “Low” sensitivity.

Table 3-2 provides a comparison between the Environmental Screening Tool and the specialist determined Site Ecological Importance (SEI) of the project. The specialist-assigned sensitivity ratings are based largely on the SEI process.

Table 3-2 *Summary of the Screening Tool Sensitivity versus the Specialist assigned Site Ecological Importance (SEI) for the Field Survey Area of the Project Area*

Screening Tool Theme	Screening Tool	Aspect	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Aquatic Biodiversity Theme	Low	PAOI	Low	Validated – No natural freshwater resources were identified within the proposed site. The development is proposed to take place surrounding an existing quarry, which is disturbed and unrepresentative of natural environmental sensitivity with regards to aquatic resources.

4 Impact Assessment

Attributed to the absence of natural water resources within the proposed development area, no impact assessments were conducted for the proposed project in relation to freshwater resources as no perceivable risks were identified.

5 Conclusions

The development area was traversed on foot, with several checks being undertaken to identify any soil wetness indicators, and to determine the local soil forms.

No natural wetlands were identified within the proposed development area; therefore, no ecological and impact assessments were conducted for the proposed project. The ecological sensitivity of the site is described in the table below.

Table 5-1 *Summary of Ecological Sensitivity for the proposed site*

Screening Tool Theme	Screening Tool	Feature	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Aquatic Biodiversity Theme	Low	PAOI	Low	Validated – No natural freshwater resources were identified within the proposed site. The development is proposed to take place surrounding an existing quarry, which is disturbed and unrepresentative of natural environmental sensitivity with regards to aquatic resources.

5.1 Specialist Statement

The proposed project is not anticipated to have any impact on the aquatic biodiversity of the area as no natural freshwater resources were identified within the proposed development area. Therefore, the proposed development can be favourably considered for authorisation.

5.2 Statement Conditions

The conclusion of this assessment on the acceptability of the proposed project and the recommendation for its approval is not subject to any conditions.

6 References

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

Kotze, D.C., Marneweck, G.C., Batchelor, A.L., Lindley, D.C., and Collins, N.B. 2009. A Technique for rapidly assessing ecosystem services supplied by wetlands, Mondi Wetland Project.

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Nel J.L. and Driver A. 2012. South African National Biodiversity Assessment 2011: Technical Report. Volume 2: Freshwater Component. CSIR Report Number CSIR/NRE/ECO/IR/2012/0022/A, Council for Scientific and Industrial Research, Stellenbosch.

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Ollis DJ, Snaddon CD, Job NM, 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.

SANBI. 2009. Further Development of a Proposed National Wetland Classification System for South Africa. Primary Project Report. Prepared by the Freshwater Consulting Group (FCG) for the South African National Biodiversity Institute (SANBI).

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7 Appendix Items

7.1 Appendix A – Specialist Declaration of Independence

I, Andrew Husted, 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.



Andrew Husted

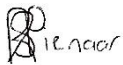
Freshwater Ecologist

The Biodiversity Company

September 2024

I, Rian Pienaar, 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.



Rian Pienaar

Ecologist

The Biodiversity Company

September 2024

7.2 Appendix B – Specialist CVs

Andrew Husted

M.Sc Aquatic Health (Pr Sci Nat)

Cell: +27 81 319 1225

Email: andrew@thebiodiversitycompany.com

Identity Number: 7904195054081

Date of birth: 19 April 1979



<p>Profile Summary</p> <p>Working experience throughout South Africa, West and Central Africa and also Armenia & Serbia.</p> <p>Specialist experience in exploration, mining, engineering, hydropower, private sector and renewable energy.</p> <p>Experience with project management for national and international multi-disciplinary projects.</p> <p>Specialist guidance, support and facilitation for the compliance with legislative processes, for in-country requirements, and international lenders.</p> <p>Specialist expertise include Instream Flow and Ecological Water Requirements, Freshwater Ecology, Terrestrial Ecology and also Ecosystem Services.</p>	<p>Key Experience</p> <ul style="list-style-type: none"> • World Bank, Equator Principles and the International Finance Corporation requirements • Environmental, Social and Health Impact Assessments (ESHIA) • Environmental Management Programmes (EMP) • Ecological Water Requirement determination experience • Wetland delineations and ecological assessments • Rehabilitation Plans and Monitoring • Fish population structure assessments • The use of macroinvertebrates to determine water quality. • Aquatic Ecological Assessments • Aquaculture 	<p>Nationality</p> <p>South African</p>
<p>Areas of Interest</p> <p>Sustainability and Conservation.</p> <p>Instream Flow and Ecological Water Requirements.</p> <p>Publication of scientific journals and articles.</p>	<p>Country Experience</p> <p>Angola, Botswana, Cameroon</p> <p>Democratic Republic of Congo</p> <p>Ghana, Ivory Coast, Lesotho</p> <p>Liberia, Mali, Mauritius, Mozambique</p> <p>Nigeria, Republic of Armenia,</p> <p>Senegal, Serbia, Sierra Leone, South Africa</p> <p>Tanzania</p>	<p>Languages</p> <p>English – Proficient</p> <p>Afrikaans – Conversational</p> <p>German - Basic</p>
		<p>Qualifications</p> <ul style="list-style-type: none"> • MSc (University of Johannesburg) – Aquatic Health. • BSc Honours (Rand Afrikaans University) – Aquatic Health • BSc Natural Science • Pr Sci Nat (400213/11) • Certificate of Competence: Mondl Wetland Assessments • Certificate of Competence: Wetland WET-Management • SASS 5 (Expired) – Department of Water Affairs and Forestry for the River Health Programme • EcoStatus application for rivers and streams

Rian Pienaar

M.Sc. Environmental Science

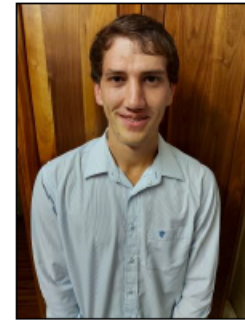
Pri Sci Nat (135544)

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Email: rian@thebiodiversitycompany.com

Identity Number: 9405235011089

Date of birth: 23 May 1994



Profile Summary

Working experience throughout Southern Africa

Specialist experience with mining, construction and agriculture.

Specialist expertise include wetlands resources, aquatic ecology, parasitology and ecotoxicology.

Areas of Interest

Mining, Oil & Gas, Renewable Energy & Bulk Services
Infrastructure Development, Farming, Land Contamination, Sustainability and Conservation.

Key Experience

- Environmental Impact Assessments (EIA)
- Environmental Management Programmes (EMP)
- Wetland delineations and ecological assessments
- Rehabilitation Plans and Monitoring
- Soil classification
- Agriculture potential assessments
- Land contamination assessments

Country Experience

South Africa
Mozambique
Botswana

Nationality

South African

Languages

English – Proficient

Afrikaans – Proficient

Qualifications

- MSc (North-West University of Potchefstroom) – Environmental Science (Cum Lauda)
- BSc Honours (North-West University of Potchefstroom) – Environmental Science with Aquatic ecosystem health.
- BSc Environmental sciences
- Pri Sci Nat (135544)