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AQUATIC BIODIVERSITY COMPLIANCE STATEMENT

FOR THE PROPOSED

DEVELOPMENT OF ZANDHOOGTE INDUSTRIAL PARK ON REMAINDER OF FARM 139, NEAR GROOT BRAK, MOSSEL BAY MUNICIPALITY

DATE: 14 August 2025

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REPORT SUMMARY

The Aquatic Compliance Statement was undertaken using desktop data analysis, site assessment, GIS mapping and scientific knowledge. It was determined that there are no natural aquatic habitats within the proposed site. Therefore, the site has a Low sensitivity, and the project will not impact aquatic biodiversity. The Compliance Statement for the Aquatic Biodiversity theme concludes that the project does not require further assessment and should be deemed as acceptable.

Declaration of Independence

SPECIALIST REPORT DETAILS

This report has been prepared as per the requirements of the Environmental Impact Assessment Regulations and the National Environmental Management Act (Act 107 of 1998), any subsequent amendments and any relevant National and / or Provincial Policies related to biodiversity assessments. This also includes the minim requirements as stipulated in the National Water Act (Act 36 of 1998), as amended in Water Use License Application and Appeals Regulations, 2017 Government Notice R267 in Government Gazette 40713 dated 24 March 2017, which includes the minimum requirements for an Aquatic Compliance Statement.

Report prepared by: Debbie Fordham (SACNASP No. 119102 Ecology)
Co-author: Colin Fordham (SACNASP No. 400166/14 Ecology)

Expertise / Field of Study:
Debbie is an internationally certified Professional Wetland Scientist and a registered SACNASP ecologist, with over 10 years of working experience, specialising in aquatic ecology. Debbie holds a M.Sc. degree in Environmental Science from Rhodes University, by thesis, entitled: The geomorphic origin and evolution of the Tierkloof Wetland, a peatland dominated by *Prionium serratum* in the Western Cape. She is a member of scientific organisations such as the Society of Wetland Scientists (SWS), the South African Wetland Society (SAWS), and the Southern African Association of Geomorphologists (SAAG).

Colin is a SACNASP registered Professional Natural Scientist (Pr. Sci. Nat.) ecologist with 14 years of experience in the environmental sector.

I, **Debbie Fordham,** declare that this report has been prepared independently of any influence or prejudice as may be specified by the National Department of Environmental Affairs Fisheries and Forestry and or Department of Water and Sanitation.

Signed:… ..... Date:…14 August 2025 ……

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1 INTRODUCTION

Debbie Fordham of Upstream Consulting has been appointed to undertake an aquatic biodiversity sensitivity assessment for the proposed light industrial development of Zandhoogte Park on the remainder of Farm 139 near Groot Brak, Mossel Bay Municipality. The proposed development envisages the development of 183 storage units and 40 light industrial workshops.

The initial site sensitivity verification study confirmed the DFFE screening tool result of 'Low' sensitivity for the aquatic biodiversity theme. Although two artificial aquatic features were identified within the site (small, off-stream, livestock dams), these are proposed to be retained as part of the development. Therefore, this Compliance Statement has been compiled to fulfil the NEMA requirements.

1.1 Purpose of the report

This report is in alignment with the requirements for the assessment and reporting of impacts of development on aquatic biodiversity (Table 1) which are set out in the 'Protocol for the assessment and reporting of environmental impacts on aquatic biodiversity published in Government Notice No. 648, Government Gazette 45421, on the 10 of May 2019, and the' Protocol for the specialist assessment and minimum report content requirements for environmental impacts on aquatic biodiversity' published in Government Notice No. 320, Government Gazette 43110, on the 20th of March 2020.

Table 1: The report content guide in relation to the minimum information and report requirements for a Compliance Statement for the Aquatic Biodiversity Theme

3	Aquatic Biodiversity Compliance Statement Requirements	Relevant section of this report:
3.1	The compliance statement must be prepared by a suitably qualified specialist registered with the SACNASP, with expertise in the field of aquatic sciences.	SWSPCP (No. 3683) and SACNASP (119102) (Page iii) and Section 9 - Specialist CV
3.2	The compliance statement must:	
3.2.1	be applicable to the preferred site and the proposed development footprint;	Section 12 – Location and Section 4 – Desktop Assessment
3.2.2	confirm that the site is of "low" sensitivity for aquatic biodiversity; and	Section 7 – Site Sensitivity verification results

3.2.3	indicate whether or not the proposed development will have an impact on the aquatic features.	Section 7 – Site Sensitivity verification results
3.3	The compliance statement must contain, as a minimum, the following information:	
3.3.1	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	SWSPCP (No. 3683) & SACNASP (119102) (Page iii) and Specialist CV
3.3.2	a signed statement of independence by the specialist;	Section 12
3.3.3	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Approach and Methods Section 5.2
3.3.4	a baseline profile description of biodiversity and ecosystems of the site;	Section 4
3.3.5	the methodology used to verify the sensitivities of the aquatic biodiversity features on the site including the equipment and modelling used where relevant;	Section 5.1 -Desktop assessment methods
3.3.6	in the case of a linear activity, confirmation from the aquatic biodiversity specialist that, 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;	Not applicable
3.3.7	where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;	Section 8 -Mitigation for inclusion into EMP
3.3.8	a description of the assumptions made as well as any uncertainties or gaps in knowledge or data; and	Section 4 -Assumptions and Limitations
3.3.9	any conditions to which this statement is subjected.	Section 8 - Mitigation for inclusion into EMP

1.2 Relevant Legislation

The protection of water resources is essential for sustainable development and therefore many policies and plans have been developed, and legislation promulgated, to protect these sensitive ecosystems. The proposed project must abide by the relevant legislative requirements. Table 2 below shows an outline of the environmental legislation relevant to the project.

Table 2: Relevant environmental legislation

Legislation	Relevance
South African Constitution 108 of 1996	The constitution includes the right to have the environment protected
National Environmental Management Act 107 of 1998	Outlines principles for decision-making on matters affecting the environment, institutions that will promote co-operative

	governance and procedures for coordinating environmental functions exercised by organs of state.
Environmental Impact Assessment (EIA) Regulations	The 2014 regulations have been promulgated in terms of Chapter 5 of NEMA and were amended on 7 April 2017 in Government Notice No. R. 326. In addition, listing notices (GN 324-327) lists activities which are subject to an environmental assessment.
The National Water Act 36 of 1998	Chapter 4 of the National Water Act addresses the use of water and stipulates the various types of licensed and unlicensed entitlements to the use of water. Any uses of water which do not meet the requirements of Schedule 1 or the GAs, require a license which should be obtained from the Department of Water and Sanitation (DWS).
General Authorisations (GAs)	Government Notice R509 of 2016 was issued as a revision of the General Authorisations (No. 1191 of 1999) for section 21 (c) and (i) water uses (impeding or diverting flow or changing the bed, banks or characteristics of a watercourse) as defined under the NWA. Determining if a water use licence is required is associated with the risk of impacting on that watercourse.
National Environmental Management: Biodiversity Act No. 10 of 2004	This is to provide for the management and conservation of South Africa's biodiversity through the protection of species and ecosystems; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; and the establishment of a South African National Biodiversity Institute.
Conservation of Agricultural Resources Act 43 of 1967	To provide for control over the utilization of the natural agricultural resources to promote the conservation of the soil, water sources and vegetation and the combating of weeds and invader plants.

1.3 Scope of Work

The Aquatic Biodiversity Compliance Statement was prepared by a suitably qualified specialist in the field of aquatic sciences in order to verify:

a. That the site is of low sensitivity for aquatic biodiversity; and
b. Whether or not the proposed development will have an impact on the aquatic features.

The Aquatic Biodiversity Compliance Statement contains, as a minimum, the following information:

a. Contact details and curriculum vitae of the specialist;
b. A signed statement of independence by the specialist;

c. Baseline profile description of biodiversity and ecosystems, including the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;
d. Methodology used to verify the sensitivities of the aquatic biodiversity features on the national web based environmental verification tool;
e. Methodology used to undertake the Initial Site Sensitivity Verification and preparation of the Compliance Statement, including equipment and modelling used, where relevant;
f. Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;
g. A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; and any conditions to which the statement is subjected.

The above is in terms of the latest NEMA Minimum Requirements and Protocol for Specialist Aquatic Biodiversity Impact Assessment as contained in the "*Procedures to be followed for the assessment and minimum criteria for reporting of identified environmental themes of Section 45 (a) and (h) of the National Environmental Management Act, 1998, when applying for Environmental Authorization*" (10 May 2020).

2 PROJECT DESCRIPTION

2.1 Location

The site is located approximately 2 km inland of the coastline, between the towns of Groot Brak Rivier and Klein Brak Rivier. The property is located inside the urban edge. The site is bound by the N2 freeway to the south, agricultural land to the east and west, Great Brak River WWTW to the south-west and industrial development to the north. The site is intersected east-west by Sandhoogte Rd. Refer to Figure 1.

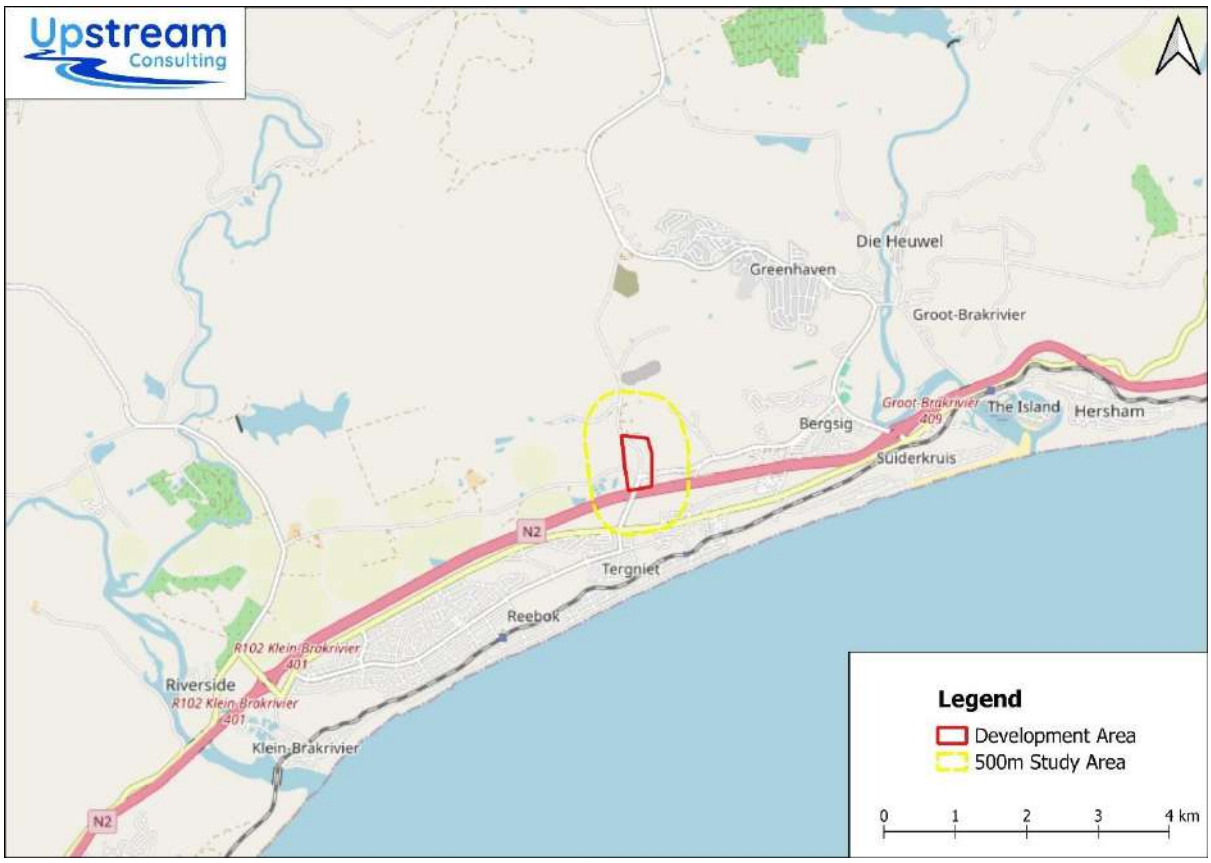


Figure 1: Locality map (OpenStreetMap)

2.2 Site Development Plan

The proposed development includes the development of 183 storage units and 40 light industrial workshops.

Since the Aquatic SSVr, the preliminary Site Development Plan (SDP) has been amended by A Enslin Archi Designs to retain the two artificial aquatic features identified on site. Refer to Figure 2 showing the latest SDP (July 2025). The two small livestock dams have been excluded from the development footprint.

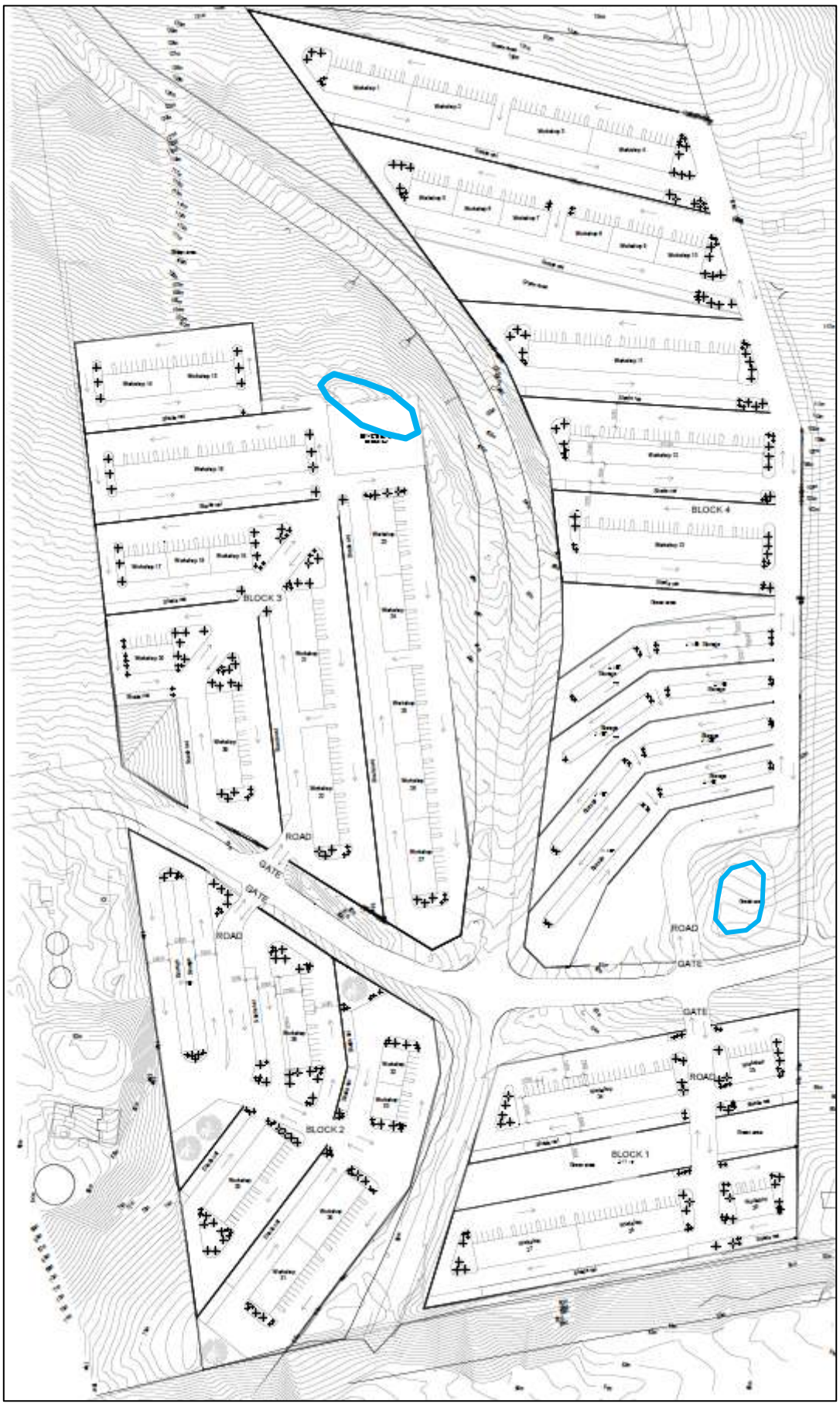


Figure 2: Site development Plan (July 2025)

The following design information has been taken from the Bulk Services Report compiled by Element Consulting Engineers (June 2025):

2.2.1 Water Supply:

Water will be supplied by a connection to the municipal bulk water pipeline. The bulk water Average Annual Daily Demand (AADD) for this proposed development is calculated at approximately 56kl/day.

2.2.2 Sewer:

Sewer from the development will drain to the south-western boundary where it will connect into the main municipal sewer line flowing into the Great Brak River WWTW. The Average Dry Weather Flow (ADWF) created by the proposed development is calculated at approximately 51kl/day.

The internal sewer network for this development is divided into four drainage zones by Sandhoogte Road and Sorgfontein Road, both cutting through the development.

- Drainage zone A (north-east depicted in orange) drains to the south-west to the Sandhoogte/Sorgfontein intersection.

- Drainage zone B (south-east and depicted in green) drains to the north-west to the Sandhoogte/Sorgfontein intersection.

- Drainage zone C (south-west and depicted in purple) drains to the north-western corner of zone C, where it will connect into the main municipal sewer line flowing into the WWTW. Drainage zones A and B flow into drainage zone C at the Sandhoogte/Sorgfontein intersection.

- Drainage zone D (north-west and depicted in blue) drains to the south-west, underneath Sandhoogte Road and into the corner of drainage zone C.

A small section of zone A, designated zone A2, situated on the southern portion of zone A, cannot gravitate to the WWTW and storage units will be developed here with no sewer infrastructure.

A conventional waterborne sewerage system will be provided with pipe diameters of generally 110mm for all unit connections and 160mm and above for main lines, as required per the detailed designs. Pipe type and class to be uPVC class 34 and laid on class C bedding and precast concrete rings manholes with concrete floor and premanufactured concrete lid.

The following design flows will be utilized:

- Workshops – 270l/100m2 GLA/day
- Storage units – no sewer connections
- Specified peak factor of 3.5
- Allowance for 15% extraneous flow
- Minimum flow velocities designed for as 0.7m/s.

The Great Brak River WWTW has recently been upgraded and has sufficient capacity to accommodate this development.

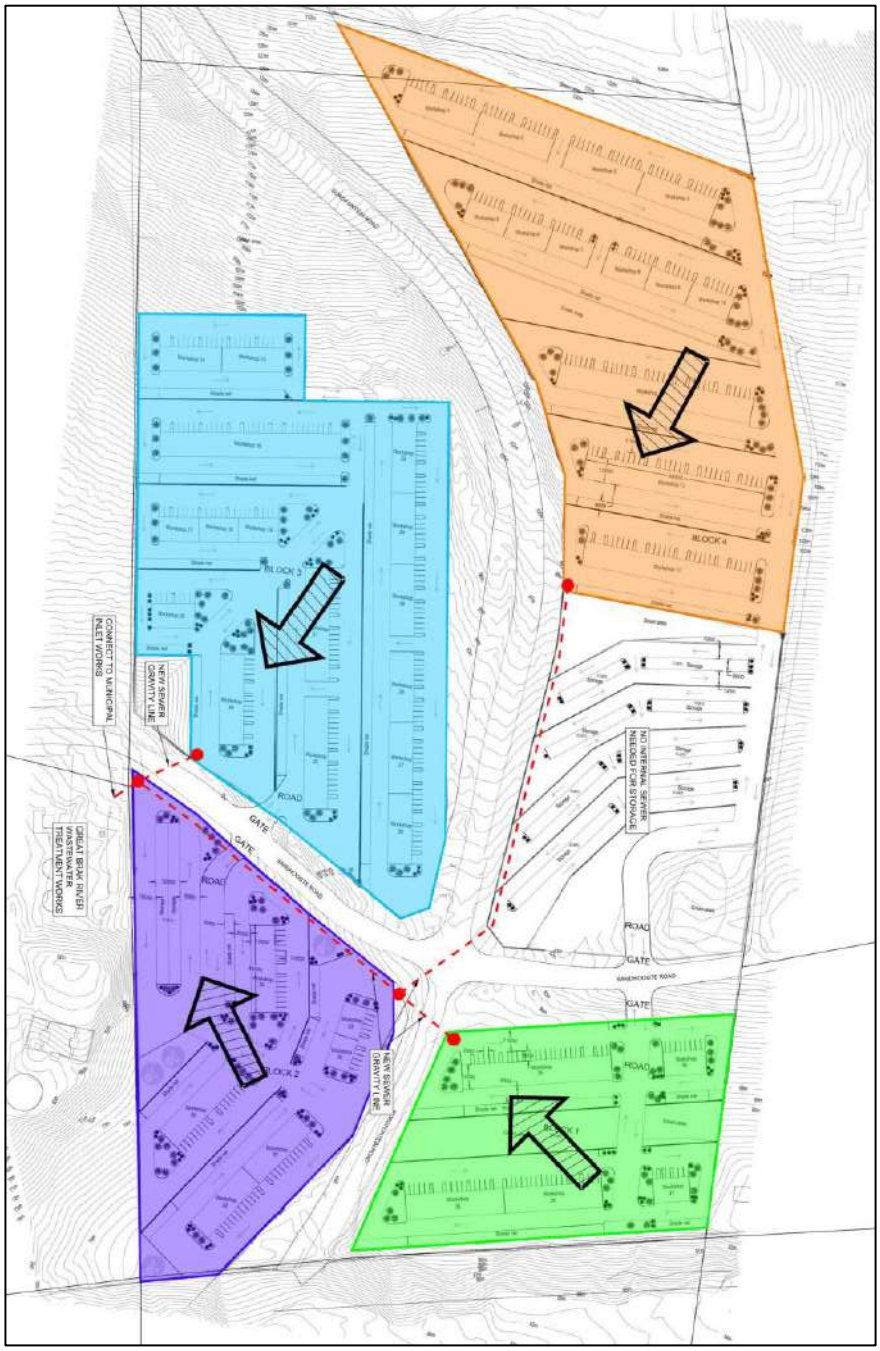


Figure 3: Sewer Layout by Element Consulting Engineers

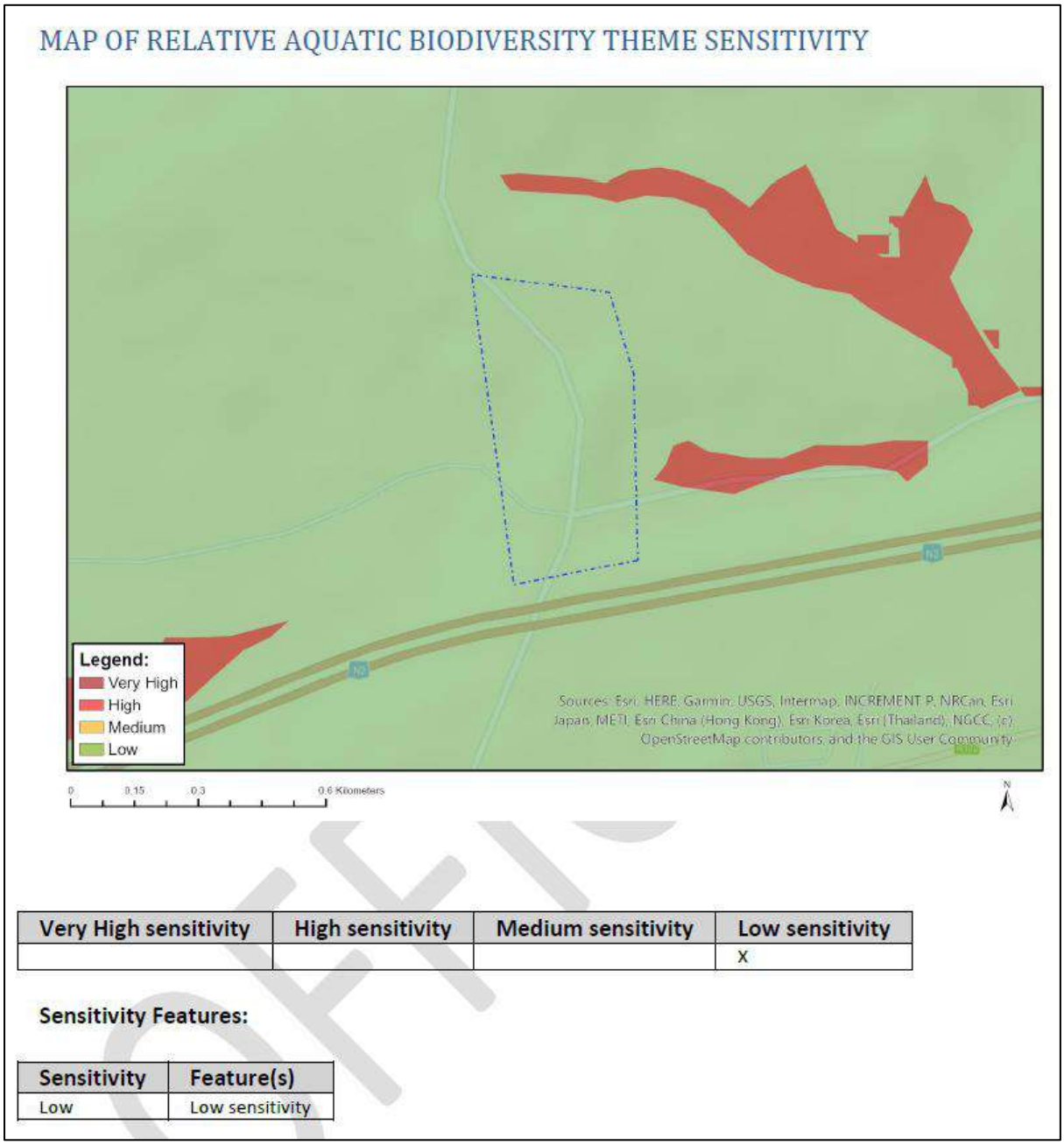
2.2.3 Stormwater:

Runoff direction from the site is to the central western and eastern sections of the site from the north and south areas (Refer to 4). The existing farmers dam in the SE is proposed to be retained as a stormwater management pond. A stormwater pond is proposed to be put in place in the SW section of the site which continues to flow towards the adjacent artificial ponds which make up the adjacent WWTW.

Figure 4: Stormwater Layout

3 DFFE SCREENING TOOL

Based on the DFFE Screening Tool, the site has Low Aquatic Biodiversity sensitivity (Figure 5). This sensitivity rating was confirmed following site verification undertaken on the 11th and 18th of July 2025. It was therefore confirmed that the site sensitivity is 'Low' for the aquatic biodiversity theme and that a Compliance Statement be submitted.



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

Figure 5: The DFFE Screening Tool results for the site A for the aquatic biodiversity theme

4 DESKTOP ASSESSMENT

Mapping the locality of aquatic habitat is essential for classification into the different wetland and river ecosystem types across the country, which in turn can be used with other data to identify aquatic systems of conservation significance. The verification study was informed by the available datasets relevant to water resources, as well as historic and the latest aerial imagery, to develop an understanding of the fluvial processes of the study area.

4.1 Biophysical Characteristics:

The study area experiences a temperate climate with relatively moderate seasonal variation. Rainfall occurs throughout the year, with a slight peak in spring and autumn, and an annual average of approximately 600–800 mm, although this can vary significantly between years. The site is located close to the coast and is influenced by maritime conditions, including regular coastal winds and high humidity levels. Vegetation in the area is mapped as Hartenbos Dune Thicket, a dense, species-rich thicket type associated with stabilised coastal dunes. However, the natural vegetation on the site has been extensively degraded by historical and ongoing livestock grazing, resulting in a more open, grassy structure with reduced indigenous shrub cover and a dominance of disturbance-tolerant species.

The site is underlain by sandy, highly permeable soils typical of the coastal foreland zone, which allow for rapid infiltration of rainfall. As a result, there is minimal surface water retention. The local topography further limits surface water concentration and there are no defined drainage lines, only subtle depressions and slight dips that do not effectively channel or retain runoff. The combination of geology, soil characteristics, and topography significantly reduces the potential for wetland or river system development in the area.

4.2 Water resources:

The study area lies within the Southern Coastal Belt DWA Level 1 Ecoregion and falls over the drainage divide between DWS quaternary catchments K20A and K10F of the Gouritz Coastal Catchment Management Area. The site does not fall within any mapped Strategic Water Source Areas. Refer to Figure 6.

When mapping the river lines relative to the site, the NBA 2018 Rivers data only identify the Groot Brak and Klein Brak rivers to the east and west, respectively. However, the site is not in proximity, nor has strong linkages, to either mainstem river. The 1:50 000 cadastral NGI river line data do show an unnamed, non-perennial river line flowing from the eastern property boundary (downslope of livestock drinking dam) towards Groot Brak but dissipating as it enters the urban area.

The National Wetland Map 5 (NWM5) includes inland wetlands and estuaries, associated with river line data and many other data sets. There are no natural NWM features within the property. However, the map indicates the presence of a seep wetland situated within the above-mentioned non-perennial drainage line, east of the site. Refer to Figure 7.

There are two NFEPA mapped wetlands - which are artificial habitats within the existing dams – mapped within the property.

4.3 Conservation

Figure 8 shows the biodiversity priority areas mapped by the Western Cape Biodiversity Spatial Plan (CapeNature 2023) relative to the study area. It indicates that there are no aquatic Critical Biodiversity Areas (CBA habitat -aquatic) within the property or the 500m radius study area. Additionally, no rare or endangered biota were found during site assessment.

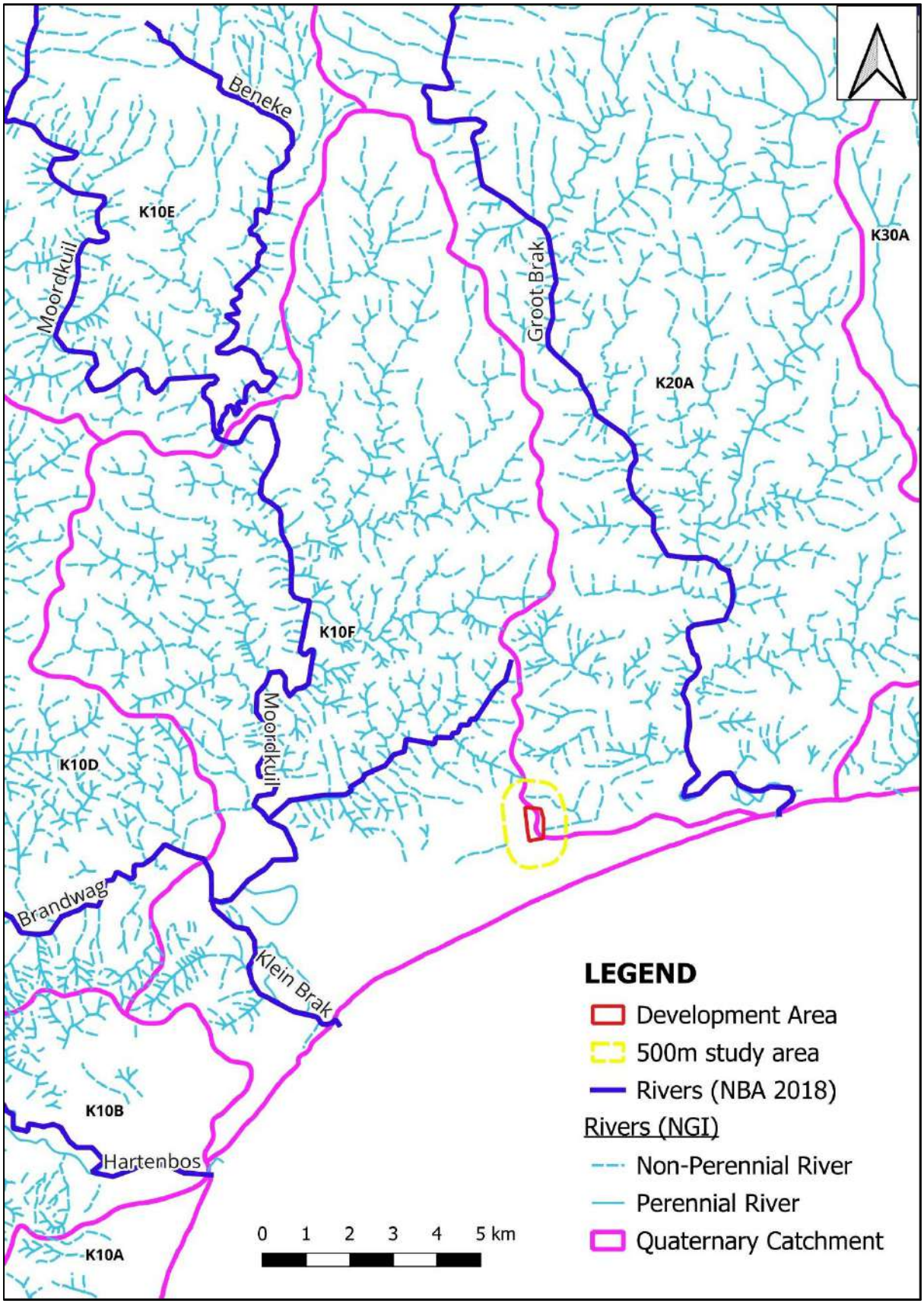


Figure 6: Map of the site relative to DWS quaternary catchments and drainage network

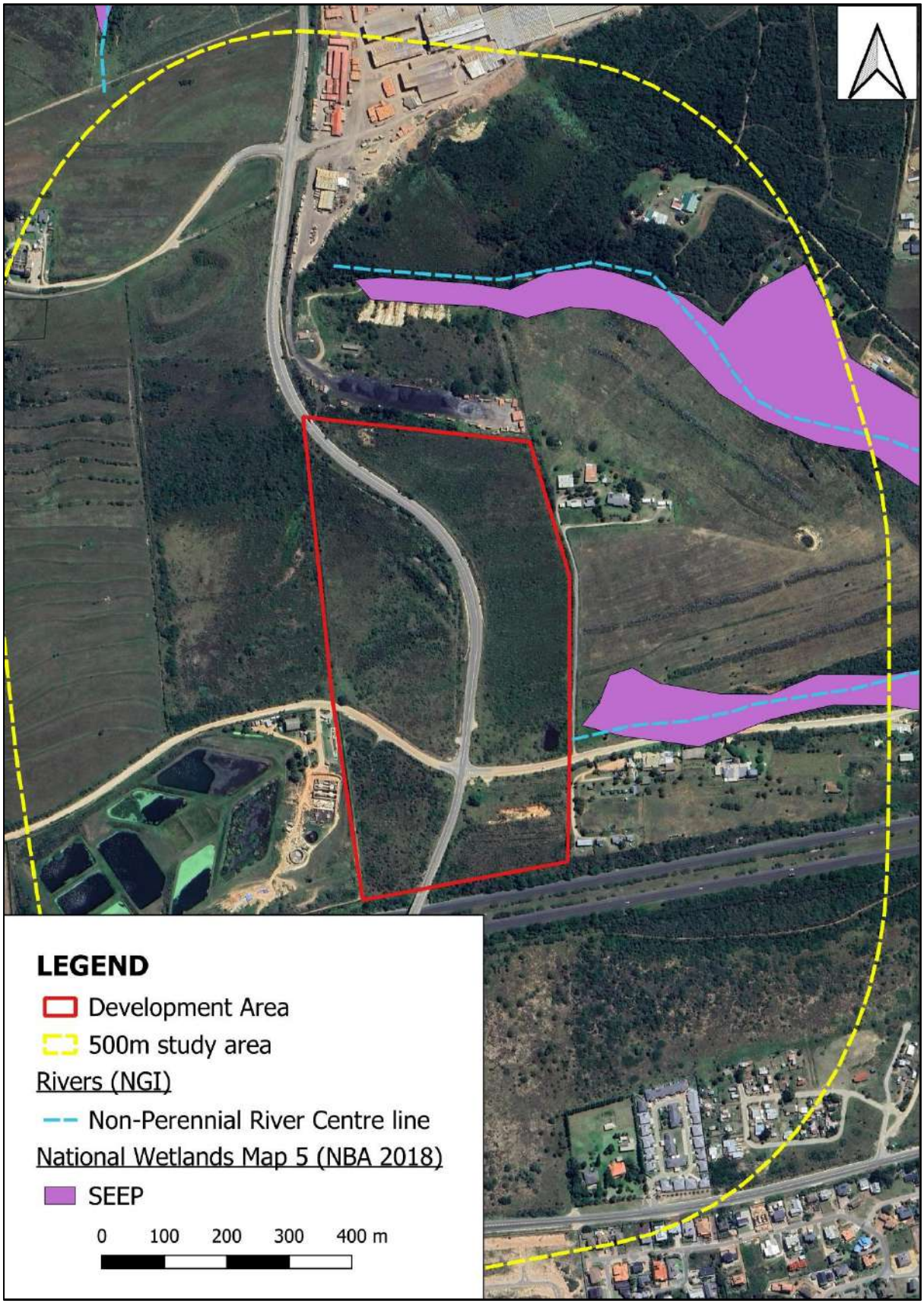


Figure 7: Map of the site in relation to the latest available river and wetland inventories

Figure 8: Map of the site in relation to the WCBSP (CapeNature 2023)

4.4 Historic Context:

The site and surrounding area have been subjected to land use cover changes for many decades. Any drainage lines have been disturbed by agricultural practices (mainly livestock grazing) and service infrastructure (i.e. the road intersecting the property and the WWTW within the study area). Historic imagery shows the entire property was cleared of thicket vegetation for grazing and two small dams were constructed on each side of the road. Refer to Figure 9 from 2004. These changes have altered any surface runoff patterns. However, due to the high infiltration rate of the sandy soils, it is unlikely that natural aquatic features were ever present within the site.

Two small, old dams are now present on site—one collects surface runoff from a nearby road, while the other lies in a low-lying area and appears to have been constructed to provide water for livestock. However, they often remain dry for extended periods, further reflecting the site's limited surface water availability.

There is no visual evidence of a connection to the drainage network below these features. Dam 2 is situated at the head of a drainage area, and therefore it is possible that wetland habitat may have once occurred downslope, but past agricultural practices have removed any potential natural features below the dams. Refer to Figure 10. Additionally, the high infiltration rate of the soils means that the presence of wetland habitat in this area is unlikely. Site assessment confirmed the lack of wetland habitat downslope of both dams.

Figure 9: Google Satellite Imagery from 2004

Figure 10: Google Satellite Imagery from 2022

5 INITIAL SITE SENSITIVITY VERIFICATION

The site verification specialist findings were informed by a site visit undertaken on the 11th and 18th of July 2025. This information was then compared to historical imagery, current wetland and river inventories, critical biodiversity areas, and 1: 50 000 topocadastral surveys of the site. A baseline map of aquatic habitat was then developed (Figure 11).

It was determined that there are two aquatic features within the property. These are both off-stream, excavated depressions with no apparent outflow. The dam near the southeastern property boundary is small, often dry, and un-utilised. Refer to Photo Plate 1. The dam in the steeper, northern area (likely also excavated for livestock drinking purposes) collects road runoff from a stormwater culvert. However, it is also only seasonally inundated and neither dam supports any ecologically important or irreplaceable habitat from an aquatic biodiversity perspective. Regardless, both features have been excluded from the development footprint and will be retained. Additionally, taking into account the stormwater management measures detailed in the Bulk Services Report, and sandy nature of the soil, it is very improbable that any watercourses will be impacted.

The SSVr concluded that there are no natural watercourses that will be impacted by the project, and the proposal will not result in reduced aquatic biodiversity. Therefore, the DFFE designation of Low aquatic biodiversity sensitivity was confirmed and led to the compilation of this Compliance Statement.

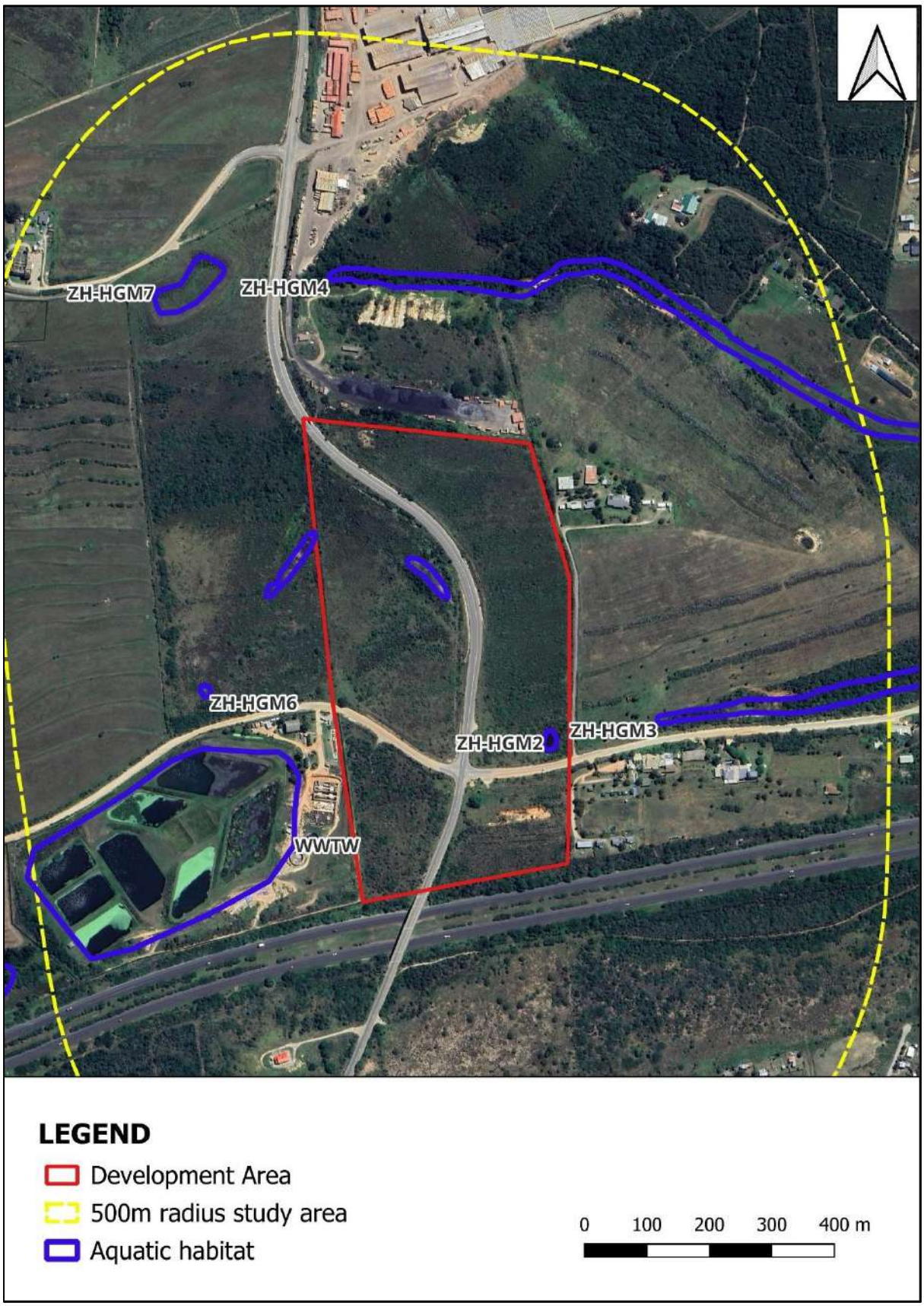


Figure 11: Aquatic habitat identified, and delineated into hydrogeomorphic (HGM) units, within 500m of the proposed site

Plate 1: Photograph of an artificial depression, which has formed wetland characteristics, most likely excavated as a seasonal, small livestock drinking dam.

6 APPROACH AND METHODS

6.1 Desktop Assessment Methods

- The study area for the assessment was defined as the development footprint i.e. the area on which the proposed development will take place, which includes the area that will be disturbed or impacted plus any watercourses situated within 500 m of that development, i.e. the 'regulated zone' of a watercourse as defined by the National Water Act.
- The contextualization of the study area was undertaken in terms of important biophysical characteristics and the latest available aquatic conservation planning information in a Geographical Information System (GIS). It is imperative to develop an understanding of the regional drainage setting and longitudinal dynamics of the watercourses. The conservation planning information aids in the determination of importance and sensitivity, management objectives, and the significance of potential impacts.
- Following this, desktop delineation and illustration of all potential watercourses within the study area was undertaken utilising available site-specific data such as aerial photography, contour data and water resource data. Digitization and mapping were undertaken using QGIS 3.42 GIS software (Table 3).
- These results, as well as professional experience, allowed for the identification of specific areas that could potentially be impacted by the activities and therefore required

groundtruthing and detailed assessment. The following data sources listed within table below assisted with the assessment.

Table 3: Utilised data and associated source relevant to the proposed project

Data	Source
Google Earth Pro™ Imagery	Google Earth Pro™
DWS Eco-regions (GIS data)	DWS (2005)
South African Vegetation Map (GIS Coverage)	Mucina & Rutherford (2006-2018)
National Biodiversity Assessment Threatened Ecosystems (GIS Coverage)	SANBI (2018)
Geology	Council for Geoscience (2019)
Contours (elevation) - 5m intervals	Surveyor General
NFEPA river and wetland inventories (GIS Coverage)	CSIR (2010)
NEFPA river, wetland and estuarine FEPAs (GIS Coverage)	CSIR (2010)
Western Cape Biodiversity Framework 2023: Critical Biodiversity Areas of the Western Cape.	CapeNature (2023)
Strategic Water Source Areas	SANBI 2021
National Wetland Map 5	Van Deventer, *et al*. (2018)

6.2 Site Assessment Methods

- Infield site assessment was conducted on the 11th and 18th of July 2025 for a total of 4 hours to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental verification tool (Low), such as new developments, infrastructure, indigenous/pristine vegetation, etc.
- Infield assessment was undertaken with a hand-held GPS, for mapping, in alignment with standard field-based procedures in terms of the Department of Water and Sanitation (DWAF 2008) *Updated Manual for the Identification and Delineation of Wetlands and Riparian Areas,* and a Dutch soil auger.

7 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are relevant:

- Project extent and layout footprint were inferred and digitised from Pdf. Documents as georeferenced data was not provided. However, the delineation GIS shapefiles were provided to the client for avoidance in the amended SDP.

- Aquatic ecosystems vary both temporally and spatially. Once-off surveys such as this are therefore likely to miss certain ecological information due to seasonality, thus limiting accuracy and confidence. That said, the level of confidence in the findings is high.
- The timing of the site assessments (wetseason) was considered suitable for undertaking the aquatic assessment, one during light drizzle and another following some rain, and due to the footprint area's low aquatic sensitivity and sandy soils. No additional site visits are deemed to be required.
- Infield soil and vegetation sampling was only undertaken within a specific focal area at the proposed site, while the remaining aquatic features were delineated at a desktop level.

8 MITIGATION FOR INCLUSION IN THE EMP

Standard best-practice construction methods, good 'housekeeping', and adherence to the EMPr should be sufficient to prevent impacts upon aquatic biodiversity. However, the following recommendations should also be adopted:

- An independent ECO must be appointed to oversee construction and be provided with the information in this report. During construction, the edge of the development footprint relative to the ponds should be clearly marked and considered as a No-Go Area. Excavated material and stockpiles must be placed outside of these areas and sediment must be prevented from being washed downslope.
- Stormwater management should focus on introducing runoff responsibly into the receiving environment and implement the SUDs design proposed in the engineering report. No contaminated surface runoff or wastewater/ wash water must be allowed to enter the stormwater system or surrounding environment, particularly any chemicals from industrial workshop activities. The development must be inspected regularly for any sewage leaks, waste/ wastewater spills, and for any discharging of 'dirty' / contaminated water from the facility. This must be enforced, and any owners, tenants and workers must be aware of these restrictions. The stormwater infrastructure should also be checked annually and following every high rainfall event to ensure it is working effectively.

- The green spaces and ponds must be cleared of any alien invasive plant (AIP) species and actively managed throughout operations to prevent AIP infestation and encourage indigenous plant growth.
- The development is unlikely to impact any natural watercourses – however – the artificial depressions are considered wetlands in terms of the National Water Act and development in their proximity may require Section 21 (c) and (i) water use authorisation. It is recommended that the Breede-Olifants Catchment Management Agency be consulted in this regard.

9 COMPLIANCE STATEMENT

In conclusion, the DFFE Screening Tool resulted in Low aquatic biodiversity sensitivity rating. Following site verification, this Low sensitivity rating for the project is confirmed. There are no natural aquatic features that will be impacted by the project. Additionally, the development layout was amended to avoid the two artificial features.

It is therefore recommended that the site sensitivity be regarded as 'Low' for the aquatic biodiversity theme and that this Compliance Statement be submitted with the EIA application.

10 REFERENCES

CSIR (Council for Scientific and Industrial Research). 2010. National Aquatic Ecosystem Priority Areas (NFEPA). Council for Scientific and Industrial Research, Pretoria, South Africa.

DEPARTMENT OF WATER AFFAIRS AND FORESTRY, 2005. A Practical Field Procedure for Identification and Delineation of Wetland and Riparian areas. Edition 1, September 2005. DWAF, Pretoria.

DRIVER, A., NEL, J.L., SNADDON, K., MURRAY, K., ROUX, D.J., HILL, L., SWARTZ, E.R., MANUEL, J. AND FUNKE, N. 2011. *Implementation Manual for Aquatic Ecosystem Priority Areas. Report to the Water Research Commission*. Pretoria

DWAF. 2008. Updated Manual for the Identification and Delineation of Wetlands and Riparian Areas, prepared by M. Rountree, A. L. Batchelor, J. MacKenzie and D. Hoare. Stream Flow Reduction Activities, Department of Water Affairs and Forestry, Pretoria, South Africa

MUCINA, L. AND RUTHERFORD, M. C. (EDS) 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

11 SPECIALIST CV

CURRICULUM VITAE

Debra Jane Fordham
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Professional profile

Debbie Fordham is an ecologist and Professional Wetland Scientist, registered with the SWSPCP (No. 3683) and SACNASP (119102, Cert. Nat. Sci. Ecological Science). She has over 10 years of working experience, largely specialising in aquatic ecology. She has authored over 100 reports and applications and she constantly contributes to the scientific and local community. Debbie holds a M.Sc. degree in Environmental Science from Rhodes University, by thesis, entitled: The geomorphic origin and evolution of the Tierkloof Wetland, a peatland dominated by *Prionium serratum* in the Western Cape.

She is a certified Professional Wetland Scientist (PWS certification number 3683) by the Society for Wetland Scientists (SWS) Professional Certification Program, which is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is a member of the Society for Wetland Scientists, the South African Wetland Society, the Southern African Association of Geomorphologists, and SACNASP.

Most of her projects involve (as a minimum) in-depth wetland and river field delineation (including soil investigations via augering, vegetation identification, and classifying the hydrological characteristics), laboratory analysis (such as water quality and sediment analysis), classification, characterisation, ecological health and ecosystem functioning assessments (using the latest available tools), as well as impact rating, buffer determinations, mitigation recommendations and detailed rehabilitation plans. She is highly proficient using GIS software to incorporate accurate spatial analysis and visual aids (No Go Area maps etc.) into her reports.

Tertiary Education

- M.Sc. Environmental Science (Rhodes University):

Master of Science thesis entitled: The geomorphic origin, evolution and collapse of a peatland dominated *by Prionium serratum*: a case study of the Tierkloof Wetland, Western Cape.

- BA Hons. Environmental Science (Rhodes University):

Honours dissertation: The status and use of Aloe ferox. Mill in the Grahamstown commonage, South Africa.

Courses: Wetland Ecology, Environmental Water Quality /Toxicology, Biodiversity, Non-Timber Forest Products (NTFPs) and Rural Livelihoods, Environmental Impact Assessment (EIA), Statistics

- BA - Environmental Science and Geography (Rhodes University)

Work Experience:

- Ecological specialist (2022/03/01 – present)
- Sharples Environmental Services cc (2016/08/10 – 2022/03/01)

Position: Aquatic Ecologist and WULA Manager

- KSEMS Environmental Consulting (2015/08/10 - 2016/07/31)

Position: Wetland specialist

- AGES EC (Pty) Ltd (2014/10/01 – 2015/08/10)

Position: Aquatic Ecologist and WULA Manager

- Environmental Impact Management Services (2014/02/04-2014/02/07)

Position: Environmental consultant

- Rhodes University (2009/04/01 – 2010/12/17)

Recent Reports:

- Aquatic biodiversity impact assessment for the proposed residential development on Portion 21 of Kraaibosch 195, George
- Aquatic biodiversity impact assessment for the expansion of Kolkies River Gypsum Mine.
- Aquatic biodiversity impact assessment for the proposed residential development of Portion 7 and 8, Kranshoek
- Aquatic biodiversity impact assessment for the expansion of Maskam Gypsum Mine and the construction of a fine residue tailings dam, Vanrhynsdorp
- Aquatic biodiversity impact assessment for the construction of the Meul River pumpstation rising main sewer pipeline, George
- Aquatic biodiversity impact assessment for the expansion of Kleingeluk Quarry, Hartenbos
- Installation of A Water Pipeline from An Existing Borehole to The Herbertsdale Reservoir, Mossel Bay Municipality

- Unauthorised Clearance of Vegetation and Construction of a Dam on Farm Angeliersbosch Re/157, Prince Albert
- Rehabilitation of The Excavation of a Channel Within the Brandwag River, On the Remainder of Farm Bowerf 161, Brandwacht, Mossel Bay
- Rehabilitation Plan for activities On A Portion of Remainder Portion 104 Of the Farm Modder Rivier No 209, George
- Aquatic Impact Assessment for The Proposed Extension of Walvis Street, Mossel Bay
- Rehabilitation Plan for the transformation of agricultural land to commercial land on Farm Re 109/209, George
- Aquatic assessment for the proposed Dana Bay Access Road, near Mossel Bay
- Invasive Alien Plant Control Plan for New Horizons Mixed-Use Development on Farm Hillview No. 437, Plettenberg Bay
- Cemetery expansion on Erf 566 and 480, Melkhoutfontein
- The expansion of Goue Akker Cemetery in Beaufort West
- Construction of a bulk sewerage pipeline from Green Valley township, Wittedrift, to the Plettenberg Bay WWTW
- Periodic Maintenance of Trunk Road 31- Barrydale To Ladismith (Km 30.89 To Km 76.06), Western Cape Province
- Expansion of the Gansbaai Sand en Klip Quarry
- Seven Oaks Residential Development, Wittedrift, Plettenberg Bay
- Gran Sasso Quarry water abstraction and proposed construction of a road crossing a watercourse, Tygervalley, Cape Town
- Maintenance of Trunk Road 33/4 and Trunk Road 34/2, though Meiringspoort, Western Cape Province
- Proposed Waste Water Treatment Works, Irrigation Activities & Effluent Discharge by Parmalat SA (Pty) Ltd, Bonnievale
- Development of Remainder of Erf 562 Kurland, Plettenberg Bay
- Ladismith Cheese Water Use Application
- Construction of A 22kv Overhead Powerline, near Humansdorp, Eastern Cape
- Development of Herold’s Bay Country Estate on A Portion of Portion 7 Of Farm

End

12 SPECIALIST DECLARATION

Specialist Company Name:	Upstream Consulting			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	NA
Specialist name:	Debbie Fordham			
Specialist Qualifications:	M.Sc. Environmental Science – Rhodes University SACNASP registered Professional Wetland Scientist			
Professional affiliation/registration:	She is a certified Professional Wetland Scientist (PWS certification number 3683) by the Society for Wetland Scientists (SWS) Professional Certification Program, which is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is SACNASP registered – no. 119102) and a member of the Society for Wetland Scientists, the South African Wetland Society, and the Southern African Association of Geomorphologists.			
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Postal code:	6530	Cell:	0724448243	
Telephone:		Fax:		
E-mail:	debbie@upstreamconsulting.co.za			

DECLARATION BY THE SPECIALIST

I, __Debbie Fordham_____, 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 48 and is punishable in terms of section 24F of the Act.

Signature of the Specialist

Name of Company: Upstream Consulting

DATE: 14/08/2025