
FRESHWATER COMPLIANCE STATEMENT

Erf 3991, Mossel Bay, Western Cape.

Prepared for Cape EAPrac

by

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(Confluent Environmental)



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- At the time of conducting the study and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
- Work performed for this study was done in an objective manner. Even if this study results in views and findings that are not favourable to the client/applicant, I will not be affected in any manner by the outcome of any environmental process of which this report may form a part, other than being members of the general public;
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Date: 27 January 2022

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1. INTRODUCTION

Confluent Environmental was appointed by Cape EAPrac to undertake a site verification for the Diaz Village residential development on Erf 3991, Mossel Bay. The site has been classified as having '**Very High**' aquatic biodiversity by the Department of Environmental Affairs (DEA) screening tool based on the fact that it is located within a Freshwater Ecosystem Priority Area (FEPA)

The scope of work for this report is guided by the legislative requirements of the National Environmental Management Act (NEMA) and the National Water Act (NWA).

1.1 National Environmental Management Act

According to the protocols specified in GN 1540 (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), assessment and reporting requirements for aquatic biodiversity are associated with a level of environmental sensitivity identified by the national web-based environmental screening tool (screening tool). An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of:

- **Very High** sensitivity for aquatic biodiversity, must submit an Aquatic Biodiversity Specialist Assessment; or
- **Low** sensitivity for aquatic biodiversity, must submit an Aquatic Biodiversity Compliance Statement.

The screening tool classified the site as being of **Very High** aquatic biodiversity due to its location with a river Freshwater Ecosystem Priority Area (FEPA). According to the protocol, prior to commencing with a specialist assessment a site sensitivity verification must be undertaken to confirm the sensitivity of the site as indicated by the screening tool:

- Where the information gathered from the site sensitivity verification differs from the screening tool designation of **Very High** aquatic biodiversity sensitivity, and it is found to be of a **Low** sensitivity, an Aquatic Biodiversity Compliance Statement must be submitted.
- Similarly, where the information gathered from the site sensitivity verification differs from the screening tool designation of **Low** aquatic biodiversity sensitivity, and it is found to be of a **Very High** sensitivity, an Aquatic Biodiversity Specialist Assessment must be submitted.

1.2 Scope of Work

The objectives of this assessment included the following:

- To undertake a desktop analysis and site inspection to verify the sensitivity of aquatic biodiversity as **Very High** or **Low**; and
- Compile an Aquatic Biodiversity Compliance Statement or Aquatic Biodiversity Specialist Assessment based on the site verification of the sensitivity of the site.

2. APPROACH

The following rationale was adopted to determine the sensitivity of aquatic biodiversity within the footprint of the site:

- The location of the site within a FEPA sub-quaternary catchment (SQC) flags the site as being of a **Very High** sensitivity. This is a precautionary approach and therefore requires that a site visit be undertaken to determine whether any watercourses that may not have been identified by widely available desktop mapping resources may in fact be present on the site;
- In the event that watercourses are confirmed to fall within the development footprint then the site sensitivity is confirmed as **Very High** and a full specialist freshwater assessment is required; and
- In the event that no watercourses are identified within the development footprint the site sensitivity is confirmed as **Low** and an Aquatic Compliance statement is required.

The determination of the site sensitivity relied upon the following approaches:

- Interrogation of available desktop resources including:
 - DWS spatial layers;
 - National Freshwater Ecosystem Priority Areas (NFEPA) spatial layers (Nel et al., 2011);
 - National Wetland Map 5 (NWM5) and Confidence Map (CSIR, 2018)
 - Western Cape Biodiversity and Spatial Plan (WCBSP) for Mossel Bay (CapeNature, 2017).
- A site visit was undertaken, during which time the following activities were undertaken:
 - Identification and classification of watercourses within the footprint of the site according to methods detailed in Ollis et al. (2013);
 - Soil augering to confirm the presence of soil indicators (DWAF, 2005) that may indicate the presence of a wetland (if applicable); and
 - Identification of hydrophilic plant species that may indicate the presence of wetland plant species (if applicable).

3. DESKTOP SURVEY

The site falls within Primary Catchment K (Kromme) area and in quaternary catchment K10A (Figure 1). No freshwater features are indicated to occur within the footprint of the property or within close proximity to the property (Figure 2).

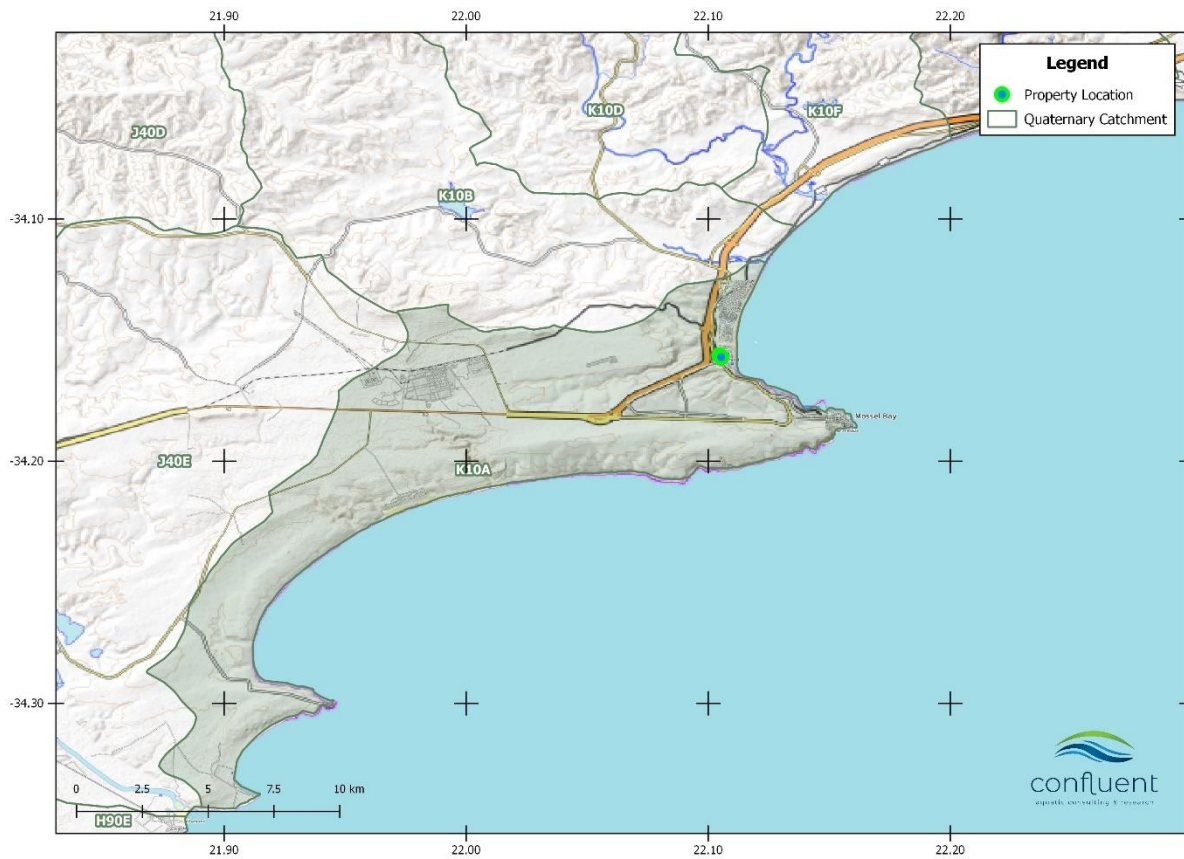


Figure 1: Location of property in quaternary catchment K10A.



Figure 2: Location of the property in relation to mapped freshwater features.

3.1 National Freshwater Ecosystem Priority Areas (NFEPA)

Aquatic biodiversity within the site has been identified as **Very High** on the basis that the site falls within a Freshwater Ecosystem Priority Area (FEPA). Rivers FEPAs achieve biodiversity targets for river ecosystems and threatened/near-threatened fish species and were identified in rivers that are currently in a good condition (A or B ecological category). Their FEPA status indicated that they should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources (Nel et al., 2011).

For river FEPAs, the whole sub-quaternary (or quinary) catchment is identified as a FEPA, although the FEPA status applies to the actual river reach within such a sub-quaternary catchment. The shading of the whole sub-quaternary catchment indicates that the surrounding land and catchment area needs to be managed in a way that maintains the good ecological condition of the river reach.

From the perspective of SQC 9292, the main unnamed river reach for which a FEPA status was assigned runs south of the Petro SA refinery into the Indian Ocean (Figure 3). Given its coastal location, the SQC includes numerous additional minor coastal rivers and streams that flow directly into the Indian Ocean, most of which do not flow into the main river reach that has been identified as a FEPA. The site and the associated freshwater features that are considered in this report fall well outside the catchment area of this main river reach. The **Very High** sensitivity, as specified by the screening tool, is therefore not necessarily applicable to all freshwater features that fall within the SQC.



Figure 3: Location of site relative to FEPAs

4. SITE VISIT

4.1.1 *Watercourses On-Site*

A site visit was conducted on the 19th of November, 2021. The entire surface area of the property was traversed by foot. The site is an undeveloped area that is surrounded by urban development and a railway to the west. The area is thus relatively disturbed by informal access roads with high levels of dumping observed (Figure 4). Vegetation is classed as Hartenbos Dune Thicket, which typically occurs on flat to moderately undulating dunes and consists of a mosaic low thicket that occur in small clumps. No watercourses (wetlands, rivers or streams) were identified within the property boundaries.



Figure 4: Photograph illustrating general vegetation and dumping on Erf 3991.

4.1.2 *Watercourses Off-Site*

Several wetlands were identified to occur within 500 m of the Erf (Figure 5). The wetland to the north grades from a channelled-valley bottom wetland into an estuary (Figure 6). This wetland has been highly modified in its lower reaches, primary due to infilling by urban development and road crossings and increased stormwater inputs from hardened surfaces. The NWM5 classifies the Present Ecological State (PES) of the wetland as D/E/F – indicating that the wetland has been Largely to Seriously modified from natural conditions. The area between the wetland and Erf 3991 is a built-up urban area (approximately 300 m between wetland and Erf 3911). Any development occurring in Erf 3991 will therefore occur well outside of the delineated area of the wetland. Due to the large distance between the wetland and the erf, impacts are expected to be negligible with the only possible impacts likely to be associated with increased stormwater input to the wetland due to the increase in hardened surface area in the development footprint. During the construction phase this could potentially result in high quantities of sediment entering the wetland. Given the modified state of the wetland and its

close proximity to the estuarine section of the river, additional stormwater volumes are not anticipated negatively impact the wetland.



Figure 5:



Figure 6: Photograph of the wetland to the north of Erf 3991, flowing into estuarine habitat.

A wetland to the south has been assessed in a previous study and has been identified as a river (and not a channelled valley-bottom wetland as indicated on the NWM5). The watercourse is confined to a very steep-sided valley and was flowing at the time of the visit (Figure 7). Flow was rapid and confined to a clearly discernible channel. The margins of the river channel were characterised by a narrow riparian zone. While flowing at the time, the river channel is likely to be highly ephemeral and, together with the relatively steep gradient of the river (0.03) is unlikely to sustain saturated soil conditions and hydrophilic wetland vegetation for a prolonged period of time. The hydro-geomorphological features of the watercourse are therefore more characteristic of a transitional river reach characterised by a bedrock and boulder substrate, confined to a steep-sided valley floor with no lateral wetland development. The development does therefore not fall within the regulated area of this watercourse as defined by Section 21 (c) and (i) of the NWA.



Figure 7: Photograph of the river to the south of Erf 3991.

5. AQUATIC BIODIVERSITY COMPLIANCE STATEMENT

Based on the results of the desktop review and the site survey, the sensitivity of aquatic biodiversity on Erf 3991, Mossel Bay can be regarded as **Low**. The main factors influencing the statement include the following:

- While the development falls within a FEPA the site falls well outside the catchment area of the river reach for which the FEPA status was determined. The development will therefore have no effect on the FEPA status of the catchment;
- No freshwater features were identified within the footprint area of the site or within close proximity (i.e. within 200 m) of the site; and
- No watercourses will be affected by the development.

6. DWS RISK ASSESSMENT

According to Section 21 (c) and (i) of the NWA, any water use activities that do occur within the regulated area of a watercourse must be assessed using the DWS Risk Assessment Matrix (GN 509) to determine the impact of construction and operational activities on the flow, water quality, habitat and biotic characteristics of the watercourse. Low Risk activities require a General Authorisation (GA), while Medium or High Risk activities require a Water Use License (WUL).

The development occurs within the regulated area of the wetland located to the north of the development (i.e. within 500 m) and the DWS risk assessment matrix (Based on DWS 2015 publication: Section 21 (c) and (i) water use Risk Assessment Protocol) was implemented to assess risks associated with the construction and operational phase impacts. The first stage of the risk assessment is the identification of environmental activities, aspects and impacts. This is supported by the identification of receptors and resources, which allows for an understanding of the impact pathway and an assessment of the sensitivity to change.

Risks for the construction (Table 1) and operational phase (Table 2) were assessed assuming full implementation of recommended mitigation measures. The only impact that could possibly affect the wetland (given it is located more than 200 m away from the development) is stormwater discharge that could be directed towards the wetland. This impact was assessed as **Low** risk to the wetland. Given the **Low** impact associated with all activities highlighted in this report, and according to Government Notice 509 of August 2016 (RSA, 2016) of the National Water Act, the construction and operation of the proposed development on Erf 3991 is Generally Authorised and does not require a Water Use License. While the development is generally authorised, it is important to note that the water use activity should still be registered with the DWS. In this respect the following steps, as highlighted in the General Authorisation for Section 21 (c) and (i) water uses, are relevant:

1. Subject to the provisions of the General Authorisation, the applicant must submit the relevant registration forms to the responsible authority;
2. Upon completion of registration, the responsible authority will provide a certificate of registration to the water user within 30 working days of the submission;
3. On written receipt of a registration certificate from the Department, the applicant will be regarded as a registered water user and can only then commence with the water use as contemplated in the General Authorisation; and
4. The registration forms can be obtained from DWS Regional Offices or Catchment Management Agency office of the Department or from the Departmental website: <http://www.dwa.gov.za/Projects/WARMS/Licensing/licensing1.aspx>

Table 1: Construction phase risk matrix completed by Dr. James Dabrowski (SACNASP registration number 114084). Severity scores assume full implementation of mitigation measures)

Activity	Aspect	Impact	Flow Regime	Water Quality	Habitat	Biota	Severity	Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Control Measures	PES OF WATERCOURSE
Site preparation and clearing of vegetation	Exposure of bare soil.	Erosion and sedimentation of wetland habitat	1	1	1	1	1	1	1	3	1	1	5	1	8	24	Low	95	<ul style="list-style-type: none"> • Development and implementation of a stormwater management plan, including controls to minimise sediment loss from the site. 	PES: D/E

Table 2: Operational phase risk matrix completed by Dr. James Dabrowski (SACNASP registration number 114084). Severity scores assume full implementation of mitigation measures)

Activity	Aspect	Impact	Flow Regime	Water Quality	Habitat	Biota	Severity	Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Control Measures	PES OF WATERCOURSE
Hardened surface area	Increased stormwater volumes	Alteration of hydrological period	1	1	1	2	1	1	1	3	1	1	5	1	8	24	Low	95	<ul style="list-style-type: none"> • Stormwater management plan to include Sustainable Drainage Systems (SuDS) to minimise stormwater discharge into the receiving environment (e.g. permeable paving, swales and bioretention ponds) 	PES: D/E

7. CONCLUSIONS

The aquatic biodiversity of the site is considered to be **Low** and as such a specialist aquatic assessment is not required for this development. The proposed development is ideally situated from the perspective of completely avoiding impacts on watercourses and aquatic biodiversity and the development is therefore acceptable from an aquatic ecosystem perspective.

While the development does occur within 500 m of a wetland, impacts of the development on the wetland are expected to be negligible and the risk to the PES of the wetland is **Low**. The development can therefore be generally authorised.

8. REFERENCES

- CapeNature (2017). *2017 WCBSM Mossel Bay [Vector] 2017*. Available from the Biodiversity GIS website, downloaded on 26 March 2019
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