

## 1. INTRODUCTION

Confluent Environmental was appointed by Cape EAPrac to undertake a freshwater survey for a proposed residential property development on Portion 19 of Farm 257, near Vleesbaai in the Western Cape. The development involves the construction of a single dwelling and a detached cottage. The site has been classified as having ‘**Very High**’ aquatic biodiversity by the Department of Environmental Affairs (DEA) screening tool.

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).

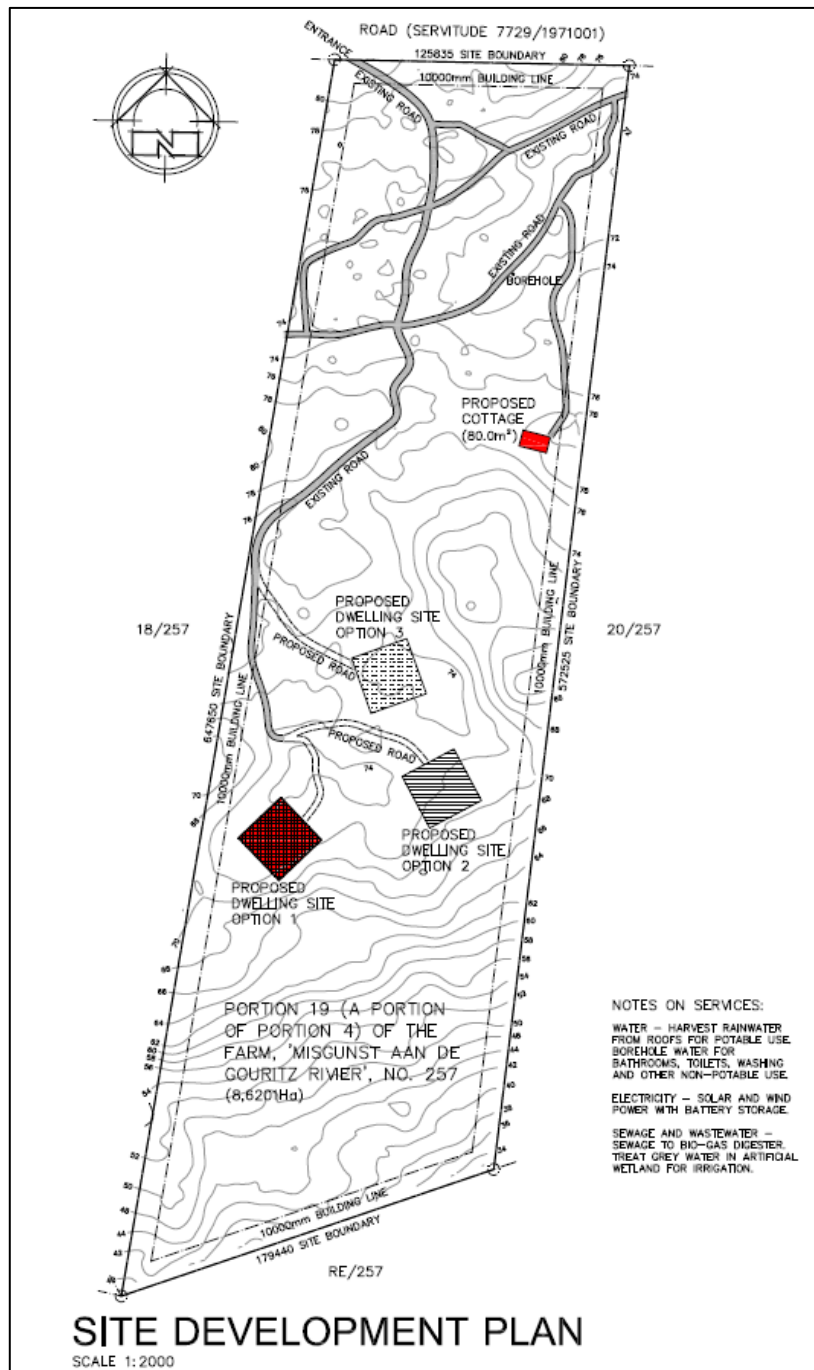


Figure 1: Plan of the proposed development on Portion 19 of the Farm 257.

## 1.2. Terms of Reference

This author was appointed to compile a Heritage Impact Assessment (HIA) that meets the requirements of Heritage Western Cape (HWC) and that is focused on a desktop study and an archaeological foot survey. The overall purpose of a HIA is to identify heritage resources in the affected area, to assess their significance and sensitivity, to determine the potential impacts on such resources, and to make recommendations to avoid and/or minimize such impacts by means of management and/or mitigation measures. This study was undertaken according to best practice principles and meets standards required by the heritage authorities in terms of the National Heritage Resources Act, No. 25 of 1999.

Summary objectives of a HIA:

- To identify and assess the nature, sensitivity and significance of heritage resources in the receiving environment;
- To identify the impact of the proposed development on such resources as well as options for mitigation and/or management in order to minimize potential negative impacts, and to recommend measures for mitigation / management where necessary; and
- To identify heritage resources and issues that may require further investigation.

After submission of the original HIA report, further correspondence from HWC on 9 December 2021 was as follows:

**FURTHER REQUIREMENTS:**  
In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape Provincial Gazette 6061, Notice 298 of 2003

**HERITAGE IMPACT ASSESSMENT: PROPOSED DEVELOPMENT OF PRIMARY DWELLING ON PTN 19 OF FARM 257 MISGUNT AAN DE GOURITZ RIVER, HESSEQUA, SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)**

**CASE NUMBER:** 20072309SB0729E

The matter above has reference.

This matter was discussed at the Archaeology, Palaeontology and Meteorites Committee (APM) meeting held on 3 November 2021.

**FURTHER REQUIREMENTS**

The HIA does not comply with the requirements of Section 38(8) as it does not adequately address the potential significance of palaeontology and archaeology and potential impacts.

### **1.3. Scope and Purpose of the Report**

“A Heritage Impact Assessment (HIA) must provide insight into the impact of the proposed development on heritage resources and provide mitigation measures to limit the effect of that impact. The HIA must provide the heritage authority with sufficient information to properly assess the significance of resources on and around a site and to understand the short, medium- and long-term consequences of the proposed development on heritage resources so that the heritage authority can make an informed comment or decision on the impacts of a proposed development” (Heritage Western Cape 2021, pg. 2).

The purpose of a HIA is to identify significant heritage resources prior to development so that such resources can be protected and/or managed without detrimental and unnecessary negative impacts resulting from development activities. This HIA aims to fulfil the requirements of the heritage authorities so that they can issue a comment for consideration by the Department of Environmental Affairs and Development Planning (DEA&DP) who will review the Application and Basic Assessment Report (BAR) for the approval or denial of authorisation. Where necessary, a HIA provides management and/or mitigation requirements that must be complied with and included in the conditions of authorisation in the event that a project is approved.

### **1.4. The Author**

Dr Peter Nilssen holds a PhD in archaeology (University of Cape Town, 2000), and is a Professional member - in good standing - of the Association of Southern African Professional Archaeologists (ASAPA), including the Cultural Resource Management section of the same association since 1989 (ASAPA professional member # 097). He is an accredited Principal Investigator for archaeozoology (specialist analysis), Coastal, Shell Midden and Stone Age archaeology; Field Director for Colonial Period archaeology; and Field Supervisor for Iron Age archaeology and Rock Art. He has worked as a professional archaeologist in Cultural Resource Management since 1989 and has completed more than 240 heritage-related impact assessments and mitigation projects as Principal Investigator

## **National Legislation and Regulations governing this report**

This is a 'specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014, as amended.

## **Appointment of Specialist**

David J. McDonald of Bergwind Botanical Surveys & Tours CC was appointed by Cape EAPrac, to undertake an initial screening assessment of Portion 19 of Farm 257, Mossel Bay, near Vleesbaai in the Mossel Bay Municipality, Western Cape Province, and thereafter and impact assessment of the proposed development (this report).

## **Details of Specialist**

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## **Expertise**

Dr David J. McDonald:

- Qualifications: BSc. Hons. (Botany), MSc (Botany) and PhD (Botany)
- Botanical ecologist with over 40 years' experience in the field of Vegetation Science.
- Founded Bergwind Botanical Surveys & Tours CC in 2006
- Has conducted over 400 specialist botanical / ecological studies.
- Has published numerous scientific papers and attended numerous conferences both nationally and internationally (details available on request)

Curriculum Vitae – Appendix 3

# 1. INTRODUCTION

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The owners of Portion 19 of 257, Fransmanshoek, Vleesbaai, wish to establish a residential house, outbuildings and associated access roads on their property.

Coastal environmental engineering specialist, Laurie Barwell, was appointed by Aquifer Resource Management (Pty) Ltd, the owners and Applicant, to provide a specialist coastal environmental engineering report as input to the professional team. The report will serve as specialist input on the siting and design of the development along with a qualitative assessment of the impact on the abiotic environment.

This report is to be included in the Basic Assessment Report (BAR) prepared by Cape EAPrac. It complements the botanical specialist report prepared by Dr David McDonald and the civil engineering report by Cobus Louw, Pr.Eng.

This report addresses the following:

- i. The physical environmental context.
- ii. The coastline and dune field stability over the 77-year period from 1942 to 2019 using available aerial images and topographical surveys.
- iii. An assessment of the implication of climate change on the coastline and dune field with reference to the WC: DEA&DP Coastal Management Lines<sup>1</sup>.
- iv. The recommended sizing of a buffer area and associated positioning of the development beyond the coastal processes active zone using the relevant historic and current information.
- v. The results of the above analyses are integrated with sound coastal environmental management practices to recommend design specifications for the location, alignment and levels related to the proposed development components.
- vi. A qualitative impact assessment of the identified options on the abiotic environment.

Recommended design parameters for the positioning of the various components of the proposed development are provided in Sections 8 and 9.

## 1.1 Study area

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Portion 19 of 257, Fransmanshoek is located 1 km ESE of the small coastal village of Vleesbaai within the Mossel Bay Municipality in the Garden Route District in the Western Province in South Africa (Figure 1). The property is situated on the Fransmanshoek promontory that forms the boundary between the two bays of Visbaai on the south and Vleesbaai to the north.

The village of Vleesbaai lies approximately 18 km SW alongshore from the coastal village of Dana Bay, Mossel Bay within the crenulated Vleesbaai bay.

The seaward boundary of Portion 19 of 257 is located 220 m directly NW of the highwater mark on the beach within Visbaai. The property lies approximately 500 m from the rocks at the north-eastern end of the logarithmic spiral-shaped embayment that stretches along a 4 km long sandy shore south-westwards to the area called Kanon (Figure 2).

## MISGUNST AAN DE GOURITZ RIVIER PLOT 19: PHASE 1 REPORT ON GROUNDWATER FEASIBILITY: APRIL 2020

### EXECUTIVE SUMMARY:

This Phase 1 report describes the properties of groundwater in general and a borehole specifically on Portion 19/257 Farm Misgunst aan de Gouritz Rivier. A basic EIA assessment is underway on the property for development of a dwelling in a regulated zone. The borehole will be a supplementary water source for domestic use. The geohydrological environment can be summarised as follows:

- The Misgunst area is underlain by Cape Supergroup sedimentary and quaternary geological groups.
- No geophysics was used in the drilling of the borehole.
- The borehole is drilled into the transitional zone between a primary and secondary aquifer.
- A blow yield of 3600 litres per hour was reported after drilling was completed down to 70 mbs.
- The estimated effective recharge is in excess of 30% of the MAP.
- The static groundwater level depth for the borehole is about 42 mbs.
- A 24-hour pump and recovery test was conducted on the borehole.
- A sustainable yield was calculated from the pumping test to be 1460 litres per hour, or 35 m<sup>3</sup> per day.
- The borehole will be operated through a solar pump at 1250 litres per hour for 8 hours a day (10 m<sup>3</sup>/day). The household only plans to use a maximum of 10m<sup>3</sup> per day.
- The groundwater is dominated by calcium and sodium anions and chloride and nitrate cations and the water is unsuitable for potable purposes due to the high salinity. The high salinity of the groundwater is attributed mainly to leachate of sea spray on the dunes to the water table.
- The project area achieved a vulnerability score of 4 and the underlying aquifer can therefore be regarded as having a LOW vulnerability.
- The GQM for the Misgunst aquifer calculates to 2, which indicates a low level of protection.
- The impact of the borehole extraction on the environment is expected to be minimal, due to the high effective recharge, the distance from neighbouring users and low extraction rate from the borehole.



## 1. INTRODUCTION

PERCEPTION Planning was appointed by Gerhard Steenekamp on behalf of Aquifer Resource Management (Pty) Ltd (being the registered owner), to submit to Heritage Western Cape (HWC) a Notice of Intent to Develop (NID) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) with relation to construction of two dwellings and an access road on the subject property. The Power of Attorney as well as copies of the relevant Title Deed and S.G Diagram are attached as part of **Annexure 1**.

The full description of cadastral land unit subject to this application is as follows:

- Portion 19 of the farm Misgunst aan de Gouritz Rivier 257, measuring 8,6201 ha, registered to Aquifer Resource Management (Pty) Ltd, held under Title Deed 16036/2019 and situated within the jurisdiction of the Mossel Bay District and Municipality, Western Cape.

## 2. BRIEF DESCRIPTION OF STUDY AREA

The subject property is situated within a smallholding complex straddling the Fransmanshoek peninsula situated  $\pm 34$  km southwest of the Mossel Bay town centre,  $\pm 6,6$  km northeast of the Gouritz River mouth/ village and  $\pm 1,9$  km southeast from the coastal village of Vlees Bay (**Figure 1**). The study area forms part of a partly-transformed coastal landscape underlain by sandy soils and interspersed predominantly by holiday homes set within indigenous coastal vegetation.



**Figure 1:** Study area location within sub-regional context (Google Earth, 2020, as edited)

Vehicular access to the property is from the main gravel road extending across the peninsula between Vlees Bay and Vleespunt and via a series of narrow, sandy jeep tracks traversing an adjoining property (**Figure 2**). Several similar tracks were noted. All smallholdings within the complex are zoned "Agricultural Zone I", a primary right of which includes the construction of a primary dwelling (no restriction in terms of siting or size of built footprint)<sup>1</sup>. None of the smallholdings within the direct proximity are used for agricultural purposes.

During field work undertaken on 13<sup>th</sup> July 2020 the property was found to be vacant and criss-crossed by a series of narrow jeep tracks, some of which appears to have been made recently (refer to Section 5). The northern portion of the property is densely overgrown by predominantly indigenous coastal shrubs whilst the southern portion consists of partly exposed dunes overgrown by coastal grass species. Survey pegs indicating the position of possible building footprints for the primary dwelling were noted.

<sup>1</sup> Mossel Bay Municipality GIS Viewer, accessed 21<sup>st</sup> July 2020

## 1. INTRODUCTION

A single residential property development has been proposed for Portion 19 of Farm 257, near Vleesbaai, Western Cape. The proposed development will consist of a single residential house (Fig. 1), and the Department of Forestry, Fisheries and the Environment (DFFE) screening tool (performed on 16 November 2021) identified the site as having a **Medium** Animal Species Theme sensitivity. A medium sensitivity, as identified by the screening tool, requires the submission of a Terrestrial Animal Species Compliance Statement. As per the protocol set out by the DFFE (2020), this Compliance Statement reports on a site visit to the study area (the area that will be impacted by the proposed development), during which the presence or likely presence of the Species of Conservation Concern (SCC) identified by the screening tool is determined.

For this proposed development, these species identified in the screening tool are the following:

- *Aneuryphymus montanus* – Yellow-winged Agile Grasshopper (grasshopper)
- *Lepidochrysops littoralis* – Coastal Blue (butterfly)
- *Circus ranivorus* – African Marsh Harrier (bird)
- *Circus maurus* – Black Harrier (bird)
- *Neotis denhami* – Denham's Bustard (bird)
- Sensitive Species 7 (which cannot be disclosed)

This report's scope follows the legislative requirements set out by the National Environmental Management Act 107 of 1998, as per the latest government gazetted notice (No. 1150, PROTOCOL FOR THE SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS FOR ENVIRONMENTAL IMPACTS ON TERRESTRIAL ANIMAL SPECIES, October 2020)