Appendix E Aquatic Biodiversity Theme SSVR

Environmental and Social Impact Assessment for Field Development in Block 11B/12B and associated production activities, South Africa

Draft Scoping Report

SLR Project No.: 700.000130.00001

14 September 2026

Aquatic Biodiversity Theme Site Sensitivity Verification Report for the proposed Field Development in Block 11B/12B and associated production activities

Mossel Bay Local Municipality, Garden Route District Municipality, Western Cape Province, South Africa

31 August 2026

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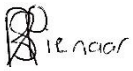
Report Name	**Aquatic Biodiversity Theme Site Sensitivity Verification Report for the proposed Field Development in Block 11B/12B and associated production activities**	
Specialist Theme	Aquatic Biodiversity Theme	
Project Reference	SSVR – Onshore Gas Pipelines	
Report Version	31 August 2026	
Responsible Specialist	Khume Mtshweni (Pri. Sci. Nat 138592)	
Reviewer	Rian Pienaar (Pr. Sci. Nat. 135544)	
Declaration	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, 2017. We have no conflicting interests in the undertaking of this activity and have no interests 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.	

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1 Introduction

The Biodiversity Company was commissioned to conduct an aquatic biodiversity Site Sensitivity Verification (SSV) report in support of the Environmental Authorisation (EA) process for the proposed Field Development in Block 11B/12B and associated production activities. The project is located proximity 16 km West of Mossel Bay, Mossel Bay Local Municipality, Garden Route District Municipality, Western Cape Province (Figure 1-1).

The proposed pipeline alternatives and associated 100 m corridors as provided are collectively referred to as the Project area, with the 500 m National Water Act (NWA) regulation zone being referred to as the Project area of Influence (PAOI) for reporting purposes (Figure 1-2).

The approach undertaken in this report has taken cognisance of the recently published Government Notices (GN) 320 (20 March 2020) and GN 1150 (30 October 2020) in terms of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA), dated 20 March and 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” (Reporting Criteria).

This report, after taking into consideration the findings and recommendation provided by the specialist herein, should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making with regards to the ecological viability of the proposed development and related activities.

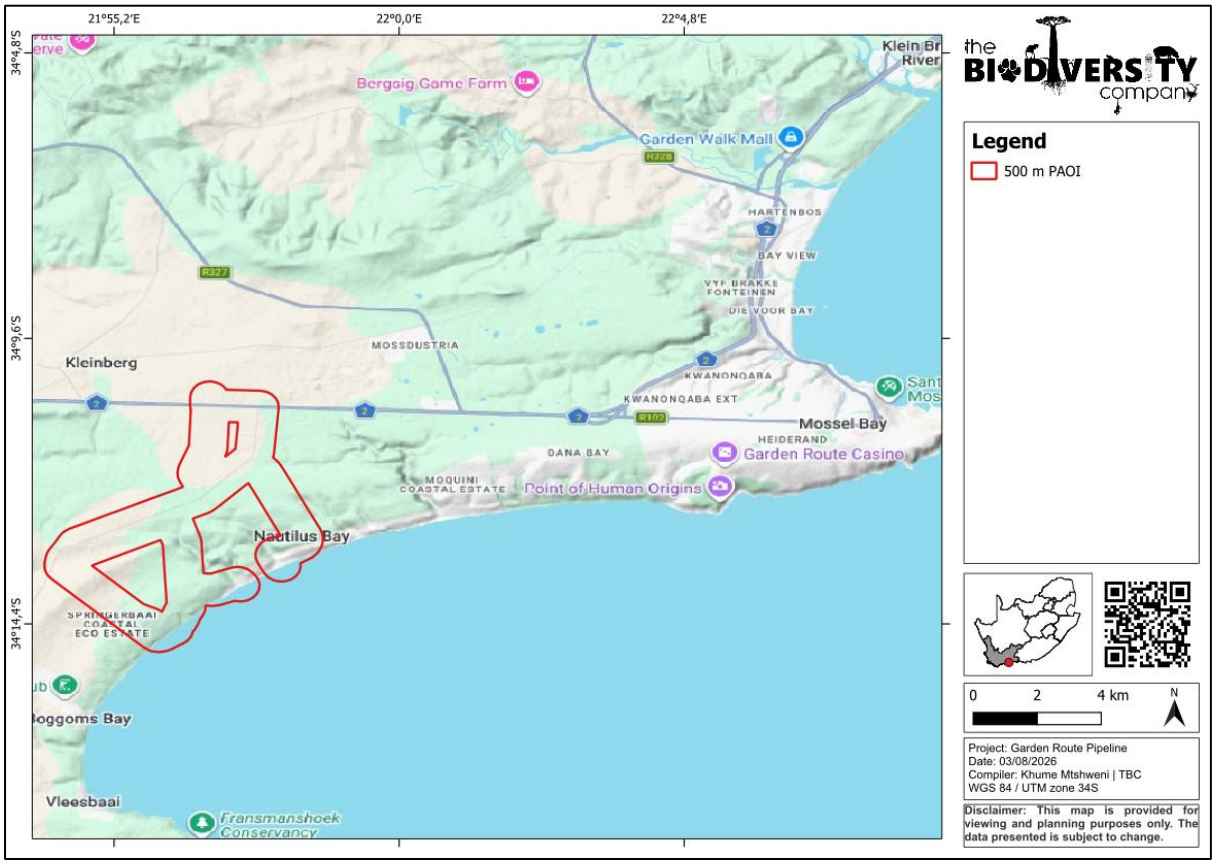


Figure 1-1 Location of the onshore portion of the proposed project

1.1 Project Background

Main Street 1549 (Pty) Ltd (Main Street)[1], together with its Joint Venture (JV) partners at the time[2], conducted exploration activities in Block 11B/12B, located ~75 km off the South Coast of South Africa, roughly between Mossel Bay and Cape St Francis. These activities, undertaken in terms of under their Exploration Right (Ref. No. 12/3/067), included seismic surveys and exploration well drilling, which led to the discovery of gas and associated condensates in the Brulpadda 1AX (2019) and Luiperd 1X (2020) wells.

Following the discovery of gas-condensate within the Paddavissie Fairway, the JV partners evaluated several development scenarios, considering both current and potential future domestic gas market demand. In September 2022, the JV partners applied for a Production Right (PR 12/4/013) (PR).

Under TEEPSA leadership, the JV also applied for an EA and commissioned an Environmental and Social Impact Assessment (ESIA) for an early field development scenario, accompanied by a public participation process in 2022 and 2023. However, in 2024, TEEPSA resigned as operator of Block 11B/12B, and together with Qatar Energy and CNRI, withdrew from the project. Main Street, elected to continue with the Project and assumed operatorship.

As the new operator, Main Street planned to advance the project through a downscaled, largely non-intrusive survey campaign to assess the metocean, benthic, geotechnical and geophysical conditions in the area, thereby informing potential future development scenarios. An EA application for this survey campaign was subsequently submitted, and the associated ESIA process commenced in February 2025.

As a result of the progressive evaluation and advancement of technical development work, and in accordance with the principles of integrated environmental management under NEMA, Main Street has expanded the ESIA to encompass the entire field development of the Paddavissie Fairway. This approach ensures comprehensive assessment of all reasonably foreseeable environmental and socio-economic impacts. This expansion in scope has led to the submission of the current EA application and associated ESIA process.

In terms of the requirements of the Environmental Impact Assessment (EIA) Regulations 2014 (as amended), published under NEMA, the proposed development and production activities require an application for EA and the undertaking of an ESIA process.

[1] Main Street is owned by Africa Energy SA Corp (Africa Energy) and Arostyle Investments (RF) Limited.
[2] Main Street's JV partners in the Exploration right were Canadian Natural Resources International (South Africa) Limited (CNRI), QatarEnergy International E&P LLC (previously Qatar Petroleum International Upstream LLC) and TOTAL Energies EP South Africa (now TotalEnergies EP South Africa S.A.S.) (TEEPSA).

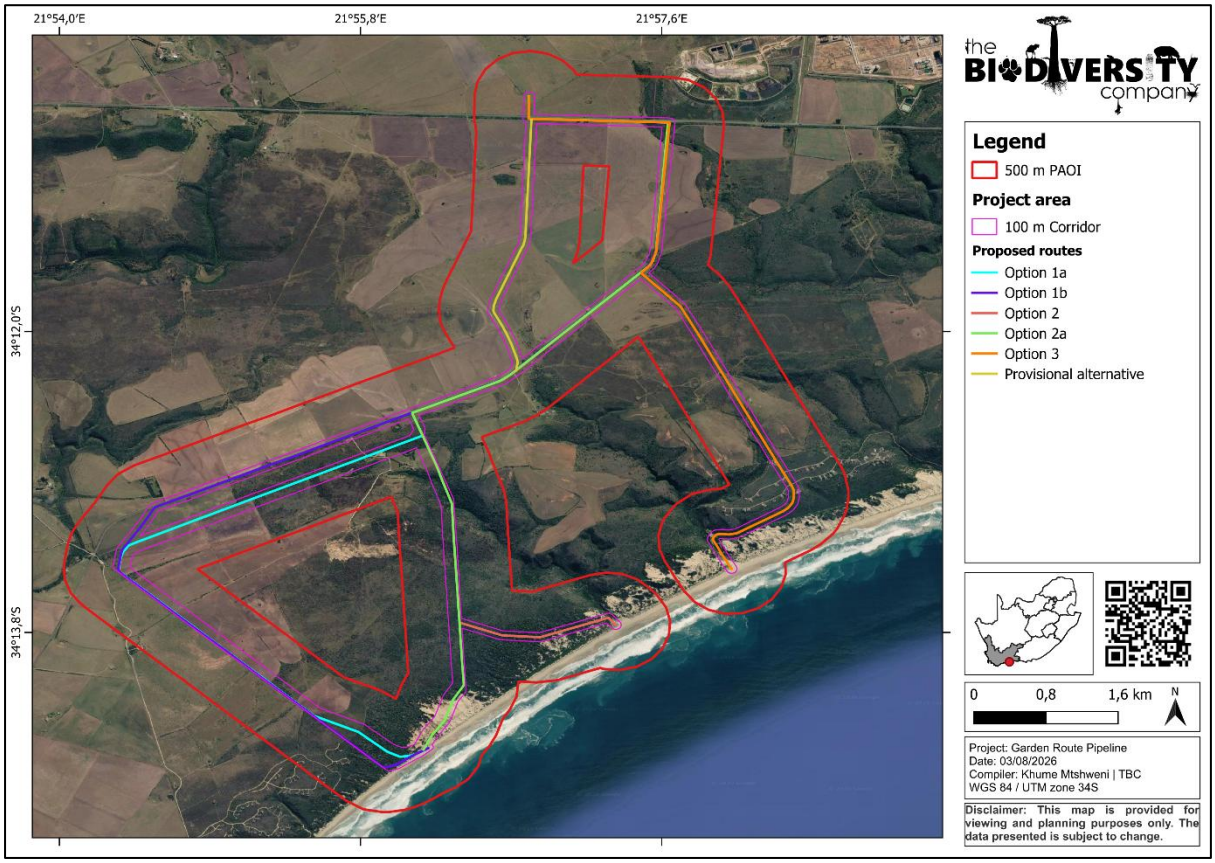


Figure 1-2 Proposed project layout

1.2 Project Description

1.2.1 Development Scenarios

Main Street has elected to assess two optional full-field development scenarios for the Paddavissie Fairway. These scenarios represent conservative, maximum footprint cases that are reasonably foreseeable, ensuring that the environmental assessment captures the upper bound of potential impacts. The final development concept will ultimately be shaped several factors, including the evolution of the future regional gas market. By assessing the maximum reasonable development envelope, the resulting EA would accommodate a range of potential development configurations. Any development scenario with a smaller environmental footprint than that assessed would, by implication, fall within the authorised impact envelope.

The two development scenarios are outlined below and illustrated schematically in Figure 1-3 and Figure 1-5 (offshore) and Figure 1-4 (onshore).

- **Production Scenario 1: Full field development of the Paddavissie Fairway and piping gas onshore (Figure 1-3 and Figure 1-4):**
    - Mooring a Floating Production, Storage and Offloading (FPSO) facility at one of two alternative locations: (1) in deep water near the wells or (2) in shallower water on the continental shelf. The FPSO will separate and process the produced liquid/gas from the wells.
    - Installing up to two ~80 km multiphase pipelines (including MEG pipeline and umbilical) from the wells to the FPSO, a ~100 km gas pipeline from the FPSO

to the shore[3], and an up to ~13 km onshore pipeline to the proposed gas receiving facility associated with the reference development case (currently a a proposed GtP facility, subject to separate EA application). This pipeline infrastructure will convey the produced well fluids from the wells to the FPSO for separation / processing and then transport the dry gas onshore for supply to the reference development case and/or other potential gas off-take opportunities that may be identified during the gas marketing phase (i.e.to the end user).

- Transferring separated condensate from the FPSO to Dynamically Positioned Shuttle Tankers (DPST), which will then transport the condensate to its destination. Treated produced water will be discharged overboard from the FPSO.

- **Production Scenario 2: Full field development of the Paddavissie Fairway and liquefying gas offshore (Figure 1-5):**
    - Mooring a Floating Liquefied National Gas (FLNG) facility at one of two alternative locations: (1) in deep water near the wells or (2) in shallower water on the continental shelf. The FLNG will separate the produced liquid and gas streams from the well fluids and will undertake liquefaction of the produced gas. A Floating Storage and Offloading (FSO) vessel is anticipated to be required to provide additional storage for the condensate which will be received from the FLNG facility. The FSO provides a condensate offloading point separate to the LNG offloading point which increases operational flexibility.
    - Installing a ~80 km multiphase pipeline (including MEG pipeline and umbilical) from the wells to the FLNG, which will convey the produced well fluids to the FSO.
    - Transferring separated condensate from the FSO to DPST and LNG from the FLNG to DPST (LNG carrier), which will then transport the products to their final destinations. Treated produced water will be discharged overboard from the FLNG.

Each of these two full-field options may be preceded by partial development of the field through existing PetroSA facilities, with continued partial export of products via these facilities during and after full development of the Paddavissie Fairway. In the event that the use of the PetroSA facilities precedes the full-field development, the ~80 km multiphase pipeline from the wells will be extended by ~40 km to the PetroSA offshore facility, whilst continued use of the PetroSA facilities during and post full-field development is envisaged by exporting a portion of the gas via a ~40 km dry gas pipeline from the FPSO or FLNG vessel to the PetroSA facility and/or delivering processed condensate to PetroSA's receiving terminal in Mossel Bay.

[3] The alignment of the offshore gas pipeline will only be finalised after the offshore surveys have been completed. The base case routing is ~100 km in length from the FPSO to the shore.

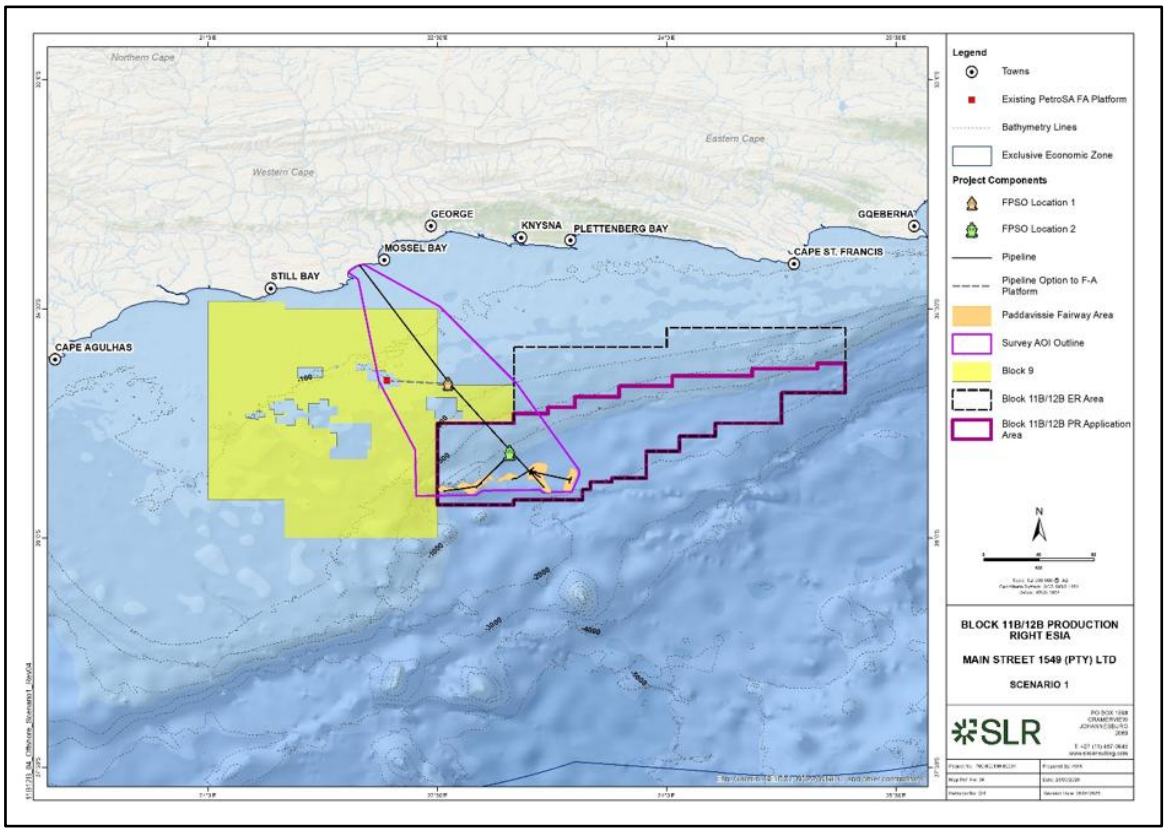


Figure 1-3 Production Scenario 1: Full field development of the Paddavissie Fairway and piping gas onshore

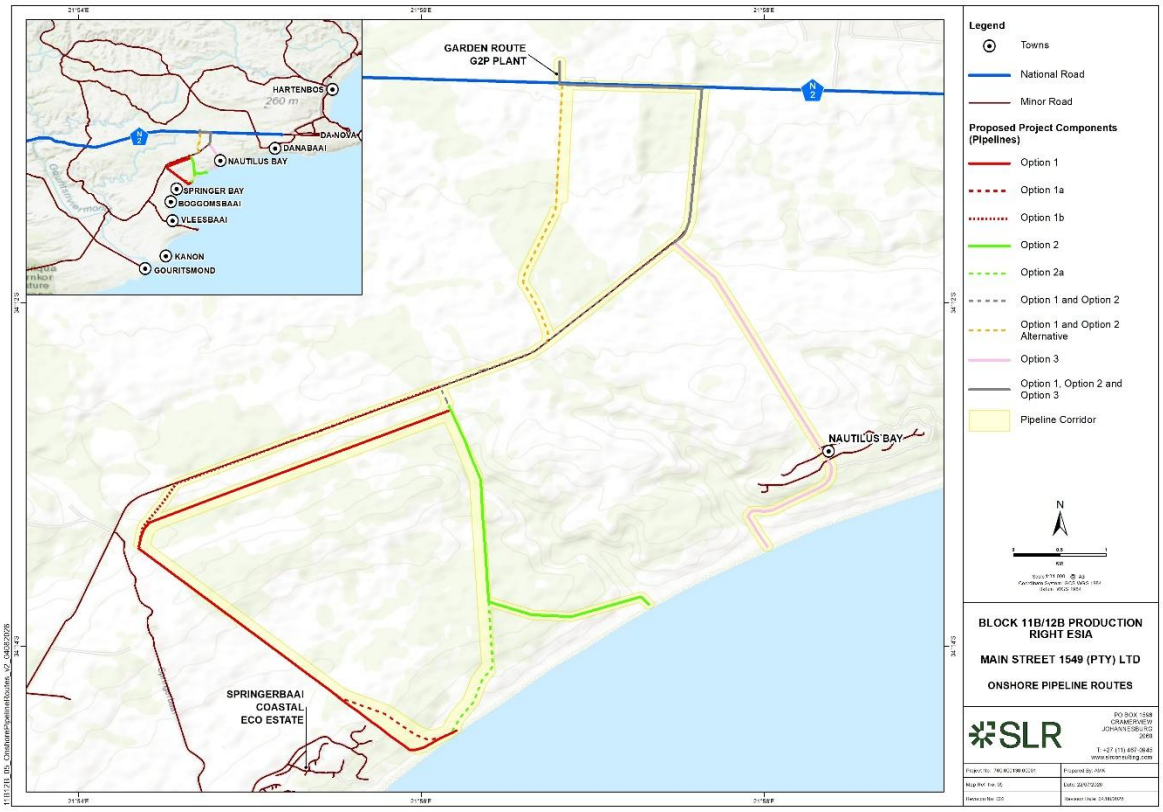


Figure 1-4 Production Scenario 1: Locality map of proposed onshore pipeline corridors on the South Coast of South Africa

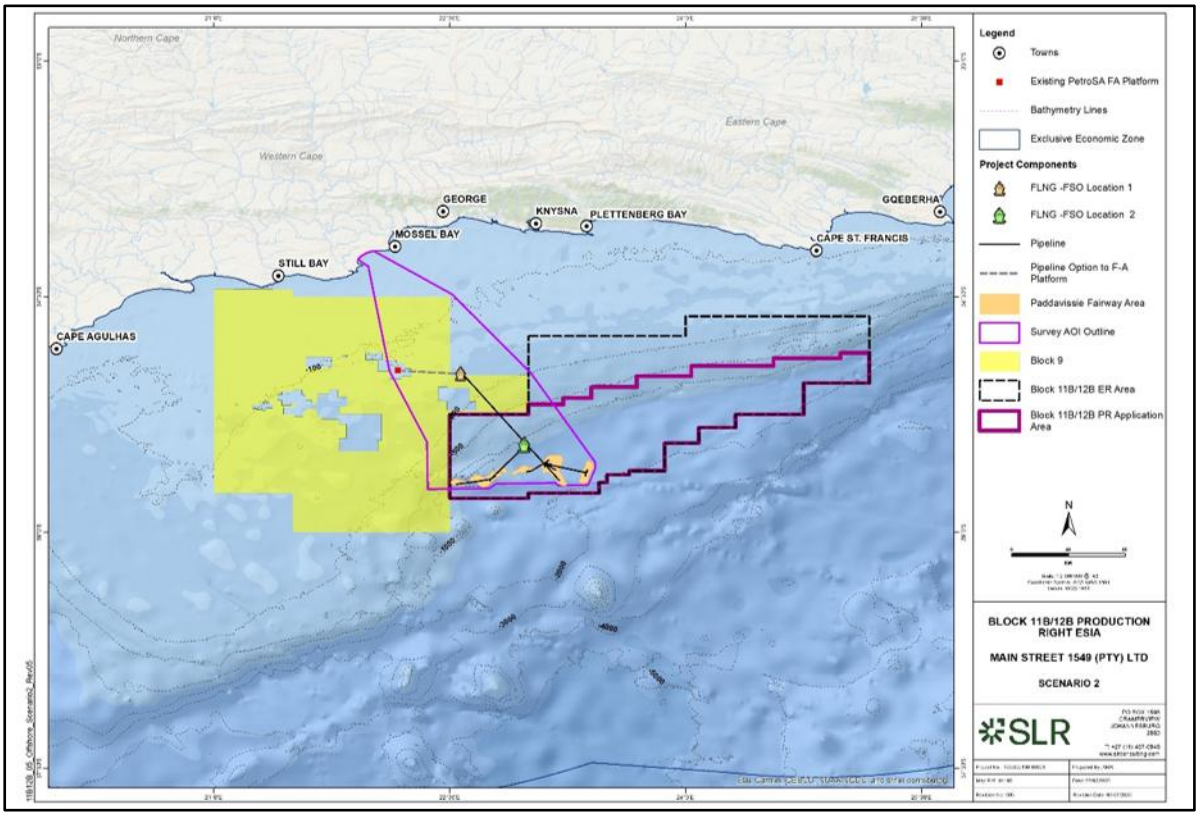


Figure 1-5 Production Scenario 2: Full field development of the Paddavissie Fairway and liquefying gas offshore

1.2.2 Project Phases and Activities

Key project phases and activities with the proposed development, installation and operation are summarised below. **Key onshore Project activities relevant to this assessment are highlighted in red below.**

- **Route and Site Assessment Surveys (over ~16 months):**
  - Offshore: A largely non-intrusive survey campaign (including bathymetry, sonar and metocean data collection, but also seafloor sampling) will be undertaken of the production sites in Block 11B/12B and along pipeline routes from the Block onto the continental shelf and to shore, as well as into adjacent Block 9.
  - Onshore: The onshore survey along the pipeline route will also be largely non-intrusive, including topographical, ground penetrating radar, magnetometer, electromagnetic, multi-channel analysis of surface waves, and electrical resistance tomography. The survey will also include some trial pits, coring and cone penetration tests.
- **Construction (drilling and installation) activities (over ~11 years[4]):**
  - Drilling of up to 19 wells in the Paddavissie Fairway (including production, appraisal and possibly gas injection wells). Before completion, some wells may be tested to refine the knowledge of the reservoir characteristics.
  - Installation and commissioning of subsea infrastructure, which includes all infrastructure located on or below the seabed used to extract hydrocarbons from the reservoir and connect the wells to the Central Processing Facility (CPF), including

[4] Construction activities to take place intermittently over an 11-year period, as indicated in Table 1-1

wellheads, Xmas trees, flow line tie-ins and end-points, and Subsea Umbilicals, Risers and Flowlines (SURF).

- Mobilisation, mooring and commissioning of the CPF (either a FPSO or FSO/FLNG depending on the development scenario).
- Installation and commissioning of gas pipeline from FPSO to shore, with a buried portion from the shore crossing to proposed gas receiving facility (e.g. GtP facility) (Scenario 1), or F-A Platform (Scenario 1 & 2). The pipeline section traversing the coastal zone will be installed using horizontal directional drilling (HDD).
- Onshore, marine and aviation support operations using available facilities.

- **Production (operation) activities (~25 years) [5]:**
  - Offshore production operations, including the activities of the shuttle tankers, which may be used to offload the processed gas and/or condensate from the CPF; and
  - Onshore, marine and aviation support operations using available facilities.
- **Decommissioning activities (~0.5 year):**
  - Plugging and abandonment of development wells following standard procedures.
  - Flushing and disconnection of pipelines and umbilicals.
  - Retrieval of selected subsea infrastructure, such as production risers and umbilicals. pipelines, structures and wellheads will be left in-situ on the seafloor.
  - Removal and relocation of CPF.
  - Onshore, marine and aviation support operations using available facilities.

1.2.3 Project Timeline

An indicative duration of key activities and timeline highlighting key milestones of the Project are summarised in Table 1-1. Where relevant, activity durations also incorporate expected operational weather or other routine interruptions, to provide a realistic schedule basis.

Table 1-1 Indicative Durations of Key Activities

Activity	Duration
Route and Site Surveys (~16 months)	
• **Offshore and onshore geophysical and geotechnical surveys**	Up to 480 days in total (including mobilisation and standby time). Some surveys will take place concurrently.
Well Drilling (over ~11 years)	
• **Offshore well drilling (up to 19 wells): production, appraisal and potentially gas injection wells**	Up to 210 days (~7 months) per three well campaign (including mobilisation), and up to seven campaigns over a period of ~11 years.
Offshore Installation & Construction (over ~11 years)	
• **Xmas Tree installation (Scenario 1 & 2)**	15 – 24 days per three well campaign thereafter
• **Pipeline (20" ND) from CPF location to Luiperd manifold location (Scenario 1 & 2)**	Up to 110 days total for installation and commissioning activities
• **Mooring lines, manifolds, Subsea Umbilical Distribution Unit (SUDUs) and Subsea Umbilical Risers and Flowlines (SURF) Installation (Scenario 1 & 2)**	Up to 180 days
• **Main umbilical installation (Scenario 1 & 2)**	Up to 30 days
• **FPSO Installation (Scenario 1)**	Up to 20 days

[5] Production could extend up to 20 to 30 years.

• **FLNG / FSO Installation (Scenario 2 only)**	Up to 80 days
• **Offshore export pipeline (24" ND) from shore to FPSO (Scenario 1 only)**	Total duration of up to 120 days: Up to 90 days for pipelay. Up to 30 days for trenching.
• **Installation of F-A pipeline (Scenario 1 & 2)**	Up to 20 days
• **Pipeline (20" ND) from CPF location to subsea Inline Tee (ILT) (Scenario 1 & 2)**	Up to 90 days to install a second pipeline from CPF location to ILT, prior to tie-back of Brulpadda, Blaasop, Woudboom and Plantanna
• **Brulpadda, Blaasop, Woudboom, Platanna Tie-Backs (Scenario 1 & 2)**	Up to 180 days per campaign (including well drilling).
Onshore Installation & Construction (Scenario 1 only)	
• **Onshore pipeline (24" ND)**	Up to 200 days
• **Shore crossing**	Up to 180 days
Production	
• **Operation of gas field and infrastructure**	Up to 20 to 30 years
Decommissioning	
• **Decommissioning**	Up to 180 days

1.3 Legislative Framework

This assessment was conducted in accordance with the amendments to the EIA Regulations. 2014 (GNR 326, 7 April 2017) of the NEMA, DFFE Environmental Screening tool (2025). The approach has taken cognisance of the published GN 320 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" (Reporting Criteria).

The SSV must be undertaken:

- For the footprint on which the proposed activities are proposed to take place and the corridor;
- By specialists, registered in the field for which they are undertaking the SSV and where relevant, with demonstrated experience in the taxonomic group of the species being considered;
- Within the season which would be most relevant to identify the specific species or vegetation of interest; and
- For a period of time as necessitated by the sensitivity of the proposed site and size of the proposed facility.

In accordance with GN 320 of Government Gazette 43110 (20 March 2020) the minimum reporting requirements for a site sensitivity verification is presented in Table 1-2 below.

Table 1-2 Aquatic Biodiversity site sensitivity verification 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
The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.	6.3
The site sensitivity verification must be undertaken through the use of: (a) a desktop analysis, using satellite imagery; (b) a preliminary on-site inspection; and (c) any other available and relevant information	4
The outcome of the site sensitivity verification must be recorded in the form of a report that: (a) confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc; and (b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity.	4.3.2

The SSVR must be submitted together with the relevant assessment report prepared in accordance with the requirements of the EIA Regulations 2014.

1.4 Scope of Work

The following terms of reference are applicable in relation to the proposed project:

- Undertake a desktop and field survey to confirm the site sensitivity in relation to the aquatic biodiversity theme; and
- Provide a SSV report detailing the findings from the desktop and field survey.

In accordance with the 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 NEMA, 1998, when applying for environmental authorisation the current use of the land and the environmental sensitivity of the site under consideration as identified by the National Web-Based Environmental Screening Tool, must be confirmed by undertaking a site sensitivity verification.

The outcome of this SSV is to:

- Confirm or dispute the current use of the land and the environmental sensitivity as identified by the screening tool; and
- Motivate and provide evidence of either the verified or different use of the land and environmental sensitivity of the site.

2 Approach

A field survey for the area was undertaken on the 27th to the 29th of July 2026, which is a wet season survey, to confirm the presence of aquatic features and to verify their sensitivity as given by the National Web-based Environmental Screening Tool. The seasonality is not considered to be a limiting factor to the assessment of which the results are conclusive. The coverage of the site by the specialist is provided in Figure 2-1.

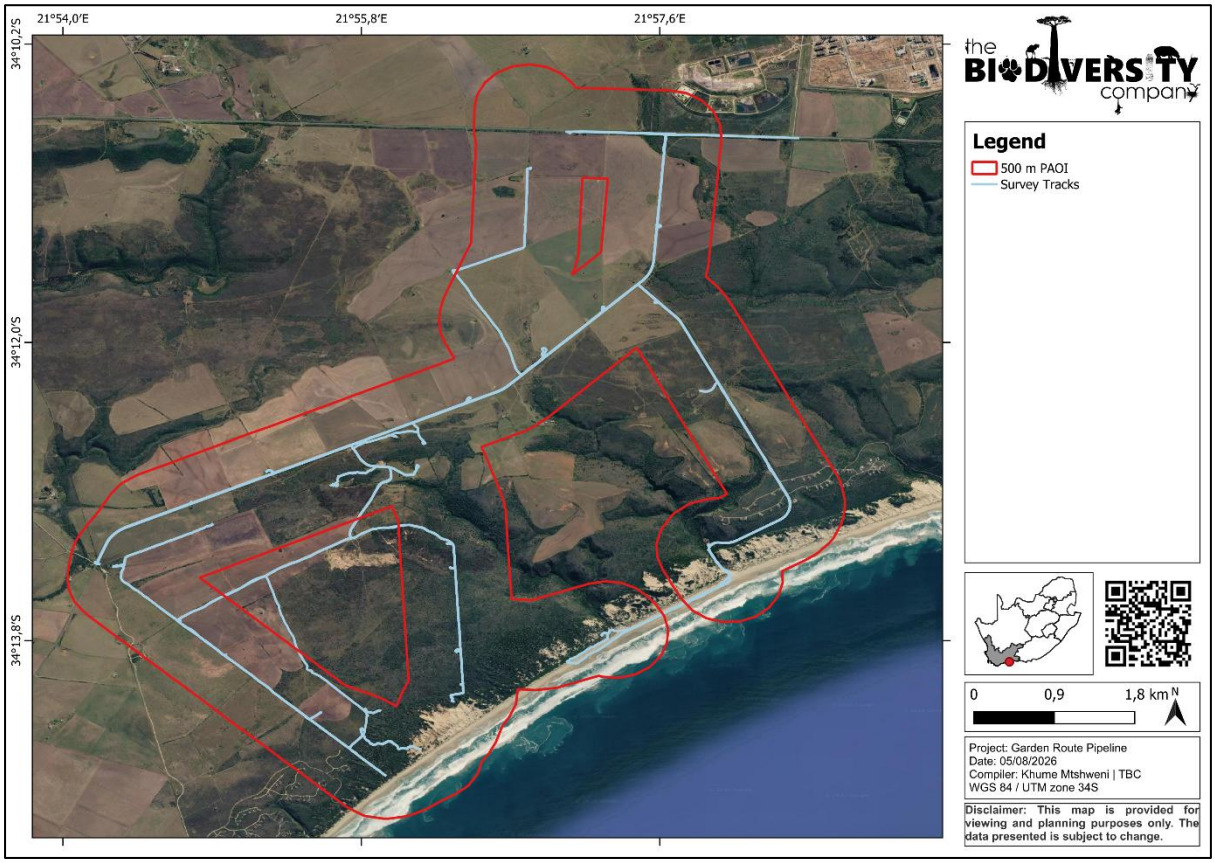


Figure 2-1 Specialist survey coverage

Specialist declarations and a Curriculum Vitae (CV) including the SACNASP registration numbers are provided in Appendix A and Appendix B, respectively. This verification report has been prepared in accordance with the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity (Government Notice 320, dated 20 March 2020).

3 Assumptions and Limitations

The following aspects were considered as limitations:

- It has been assumed that the extent of the Project area provided to the specialist is accurate;
- Apart from the proposed area polygons as per Figure 1-2, no other spatial information was provided in relation to the layout of the proposed structures at the time of survey and report preparation;
- Representative sampling was conducted and this approach inherently meant that some portions were not traversed on foot; however, the results obtained are considered sufficient to confirm or dispute the current land use as identified by the National Web-based Environmental Screening Tool;
- No wetland functionality assessments were conducted as the intent of the SSV is to identify the presence of aquatic features (wetlands);
- The seasonality of the survey is not considered to be a limiting factor with regard to identifying and delineating wetland features as the survey was conducted in the preferred season; and

- The GPS used for water resource delineations is accurate to within five metres. Therefore, the wetland delineation plotted digitally may be offset by a maximum of five metres to either side.

4 Results & Discussion

4.1 Desktop Review

The datasets listed below were incorporated to establish the relation between the project and ecologically important or sensitive freshwater entities.

Table 4-1 Summary of Relevance of the Proposed Project to Ecologically Important Landscape Features

Desktop Information Considered	Relevant/Irrelevant
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	Relevant – PAOI overlaps with SAIIAE ecosystems.
National Freshwater Ecosystem Priority Area (NFEPA)	Relevant – PAOI overlaps with NFEPA wetlands.
Provincial Conservation Plan	Relevant – PAOI overlaps with CBA and ESA areas.
Strategic Water Source Areas (SWSAs)	Irrelevant – PAOI does not overlap with a SWSA.

4.2 Freshwater Habitat Delineations

Wetland delineation within the 500 m PAOI for the Garden Route Pipeline confirmed the presence of several hydrogeomorphic (HGM) types and freshwater features within and adjacent to the proposed 100 m corridor. These include channelled valley-bottom wetlands, unchannelled valley-bottom wetlands, seeps, depressions, and associated drainage lines, as well as a number of artificial water bodies such as instream dams, mine dams, and off-channel dams (see Figure 4-1 and Figure 4-2). The most extensive wetland systems are located in the north-eastern portion of the study area, while smaller seepage features, drainage lines, and valley-bottom units are distributed through the central, western, and coastal sections of the route. Buffers of 20 m, 25 m, and 35 m were applied to the delineated aquatic features to indicate zones of sensitivity and to inform impact avoidance and mitigation planning. The presence of these wetlands confirms that the proposed pipeline corridors traverse a hydrologically sensitive landscape, and that careful crossing design and construction-phase controls will be required.

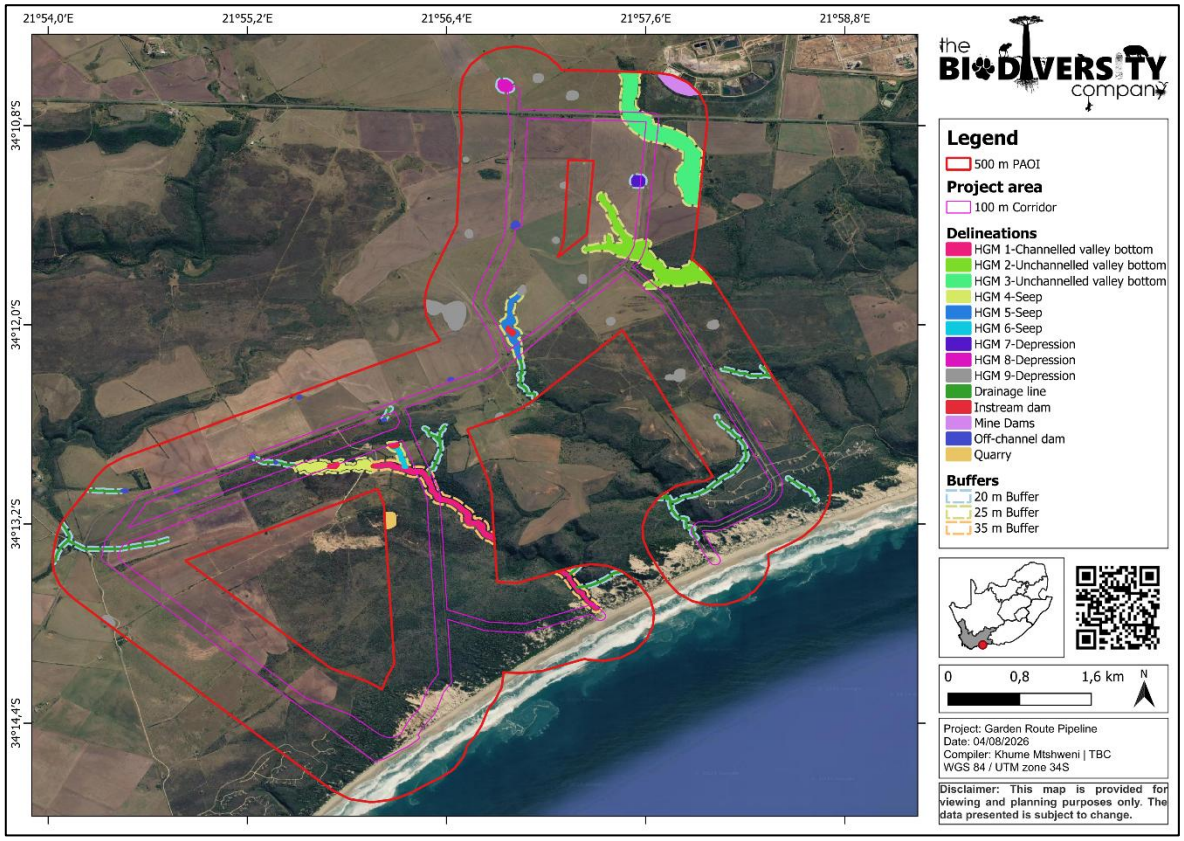


Figure 4-1 Watercourse features identified within the Project Area

Table 4-2 Spatially representative survey sites

Survey Point	Description	Photographs
Site GPS Reference: 1 Date: 27/07/2026 GPS Coordinates: 34°12'50.37"S 21°56'3.91"E	Channelled Valley Bottom (HGM 1)	

Site GPS Reference: 2 Date: 28/07/2026 GPS Coordinates: 34°11'34.29"S 21°57'33.60"E	Unchannelled Valley Bottom (HGM 2)	
Site GPS Reference: 3 Date: 28/07/2026 GPS Coordinates: 34°10'51.57"S 21°57'38.78"E	Unchannelled Valley Bottom (HGM 3)	
Site GPS Reference: 4 Date: 27/07/2026 GPS Coordinates: 34°12'51.07"S 21°55'39.46"E	Seep (HGM 4)	

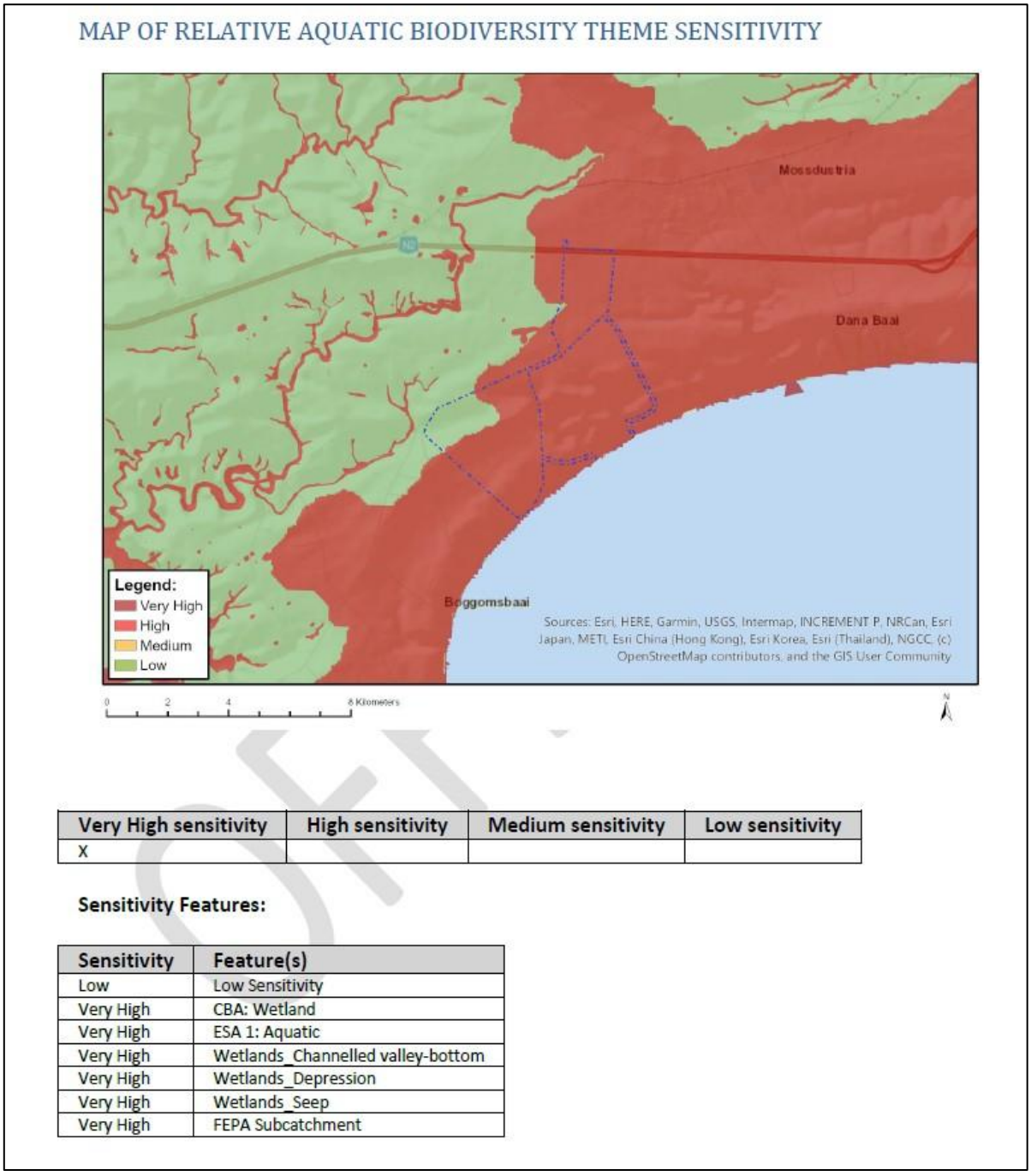
Site GPS Reference: 5 Date: 28/07/2026 GPS Coordinates: 34°12'5.11"S 21°56'48.68"E	Seep (HGM 5)	
Site GPS Reference: 6 Date: 28/07/2026 GPS Coordinates: 34°11'45.24"S 21°57'38.99"E	Dam	
Site GPS Reference: 7 Date: 29/07/2026 GPS Coordinates: 34°13'12.80"S 21°57'50.97"E	Drainage line / Non perennial river	

4.3 Site Sensitivity Verification

4.3.1 Desktop Ecological Sensitivity

The following is deduced from the National Web-based Environmental Screening Tool (Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended):

- The Aquatic Biodiversity Theme sensitivity as “Very High” due to the presence of ESA 1: Aquatic, wetlands: channelled valley-bottom, depression & seep, FEPA Subcatchment (Figure 4-2).



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	CBA: Wetland
Very High	ESA 1: Aquatic
Very High	Wetlands_Channelled valley-bottom
Very High	Wetlands_Depression
Very High	Wetlands_Seep
Very High	FEPA Subcatchment

Figure 4-2 Aquatic Biodiversity Theme Sensitivity for the Project Area

4.3.2 Screening Tool Comparison

The allocated sensitivities for each of the relevant themes are either disputed or validated for the areas assessed as described in Table 4-3 below.

Table 4-3 Summary of the Screening Tool and specialist assigned ecological sensitivities

Features	Screening Tool Theme	Environmental Screening Tool Sensitivity	Specialist Sensitivity	Tool Validated or Disputed by Specialist - Reasoning
Wetlands	Aquatic Biodiversity Theme	Very High	High	Disputed – The wetland contributes to the overall ecological value of the landscape by providing habitat and ecological corridor functions due to its connectivity within the broader

		landscape setting, although this function is expressed in a limited capacity. While the screening tool identifies the feature as being of very high sensitivity, this classification is considered disputable given the degree of anthropogenic modification evident within the system; as such, the wetland is more appropriately regarded as being of high sensitivity.
Freshwater Buffer	Medium	Disputed – These areas are representative of the wetland area periphery and are of importance in terms of supporting intactness of the features they encompass.
Remaining Area	Low	Disputed – No natural wetlands were identified within this area.

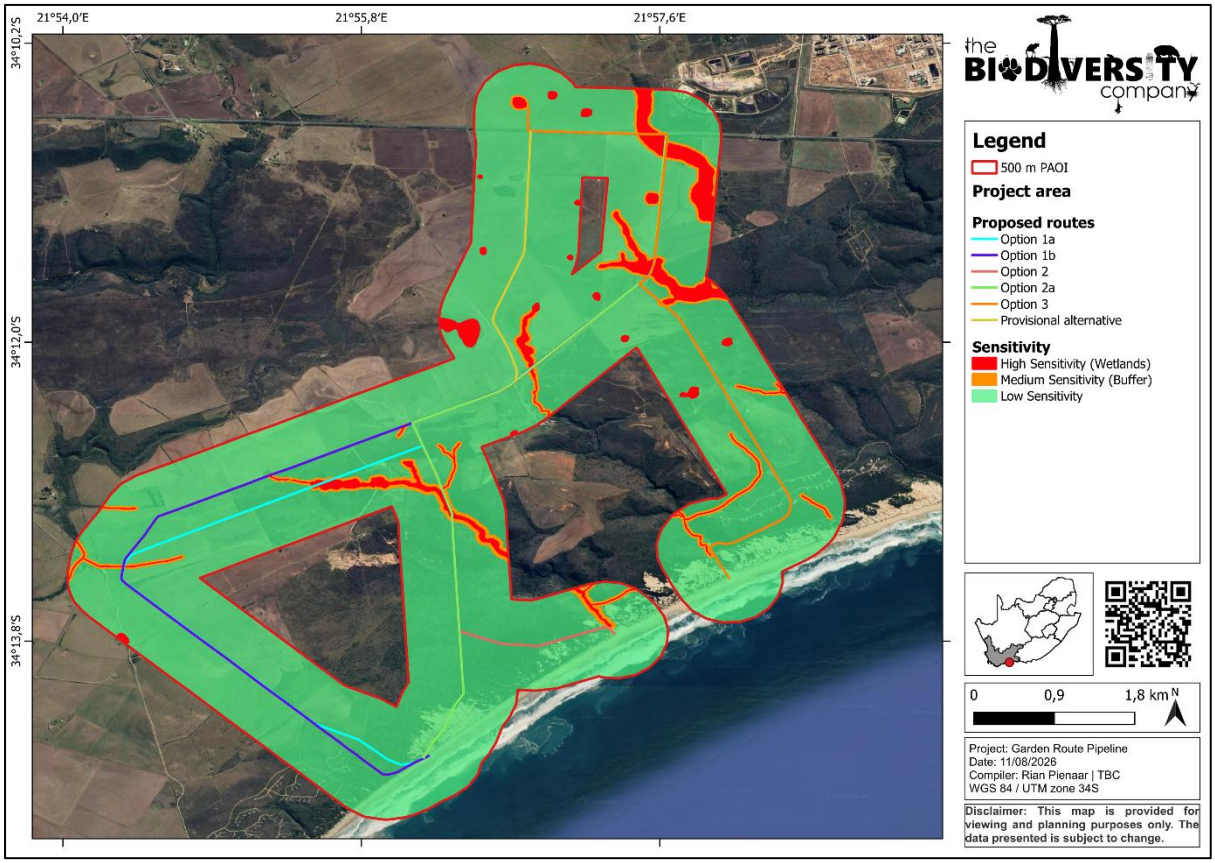


Figure 4-3 Freshwater sensitivity map for the Project Area

5 Conclusion

During the field assessment conducted from 27 to 29 July 2026, a number of freshwater features were identified within the Project Area, including channelled valley-bottom wetlands, unchannelled valley-bottom wetlands, seep wetlands, depression wetlands, associated drainage lines, as well as a number of artificial waterbodies such as instream dams, mine dams, and off-channel dams.

The aquatic biodiversity theme sensitivity for the project site, based on a site sensitive verification, is characterised by:

- Areas of “High” sensitivity attributed to the presence of the delineated wetlands;
- Areas of “Medium” sensitivity attributed to the presence of drainage features and the freshwater buffer areas; and
- Areas of “Low” sensitivity attributed to transformed or artificial features and areas where no natural wetlands were identified.

Areas of “Low” sensitivity are generally more favourable for development. Areas of “High” and “Medium” sensitivity, including the delineated wetland features and their associated 20 m, 25 m, and 35 m buffers, should as far as possible be avoided by the proposed development and associated infrastructure placement.

It is the opinion of the specialist that the Project can be favourably considered, provided that the final layout is informed by the aquatic sensitivities presented herein and that wetland crossings are minimised through appropriate planning and design. No fatal flaws were identified during the assessment, and it is further concluded that no additional site visit is required at this stage.

6 References

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

Department of Water and Sanitation (DWS). 2005b. River Ecoclassification: Manual for Ecostatus Determination. First Draft for Training Purposes. Department of Water Affairs and Forestry.

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Appendix Items

6.1 Appendix A – Methodology

6.1.1 Information Sources

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

- South African Inventory of Inland Aquatic Ecosystems (SAIIAE), NBA 2018 Rivers and Wetlands (Van Deventer *et al*. 2019);
- National Freshwater Priority Areas, Rivers and Wetlands, 2011 (Nel *et al*. 2011);
- Strategic Water Source Areas (Lötter and Le Maitre, 2021); and
- Provincial Conservation Plan.

6.1.2 Identification and Mapping

The wetland areas were delineated in accordance with the DWAF (2005) guidelines, a cross section is presented in Figure 6-1. Vegetation is used as the primary wetland indicator. However, in practise the soil wetness indicator tends to be the most important, and the other three indicators are used in a confirmatory role.

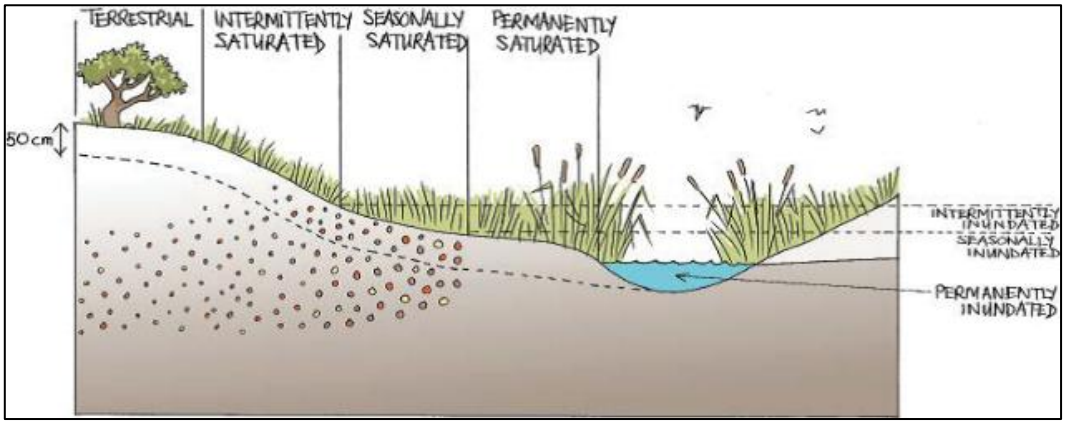


Figure 6-1 Cross section of a wetland, indicating how the soil wetness and vegetation indicators respond to changes in topography (Ollis et al. 2013)

6.1.3 Delineation

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

6.1.4 Classification and Description

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

6.1.5 Site Sensitivity Verification

The baseline aquatic / freshwater sensitivity of the project area was obtained using the National Web-based Environmental Screening Tool (Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended). The allocated sensitivities for each of the relevant themes are either disputed or validated for the assessed areas based on the presence or absence of features and specialist assigned Ecological Importance and Sensitivity of the different systems (where applicable), with consideration been given to the presence of observed or likely sensitive fauna and flora.

6.2 Appendix B – Specialist Declaration of Independence

Declaration

I, Khume Mtshweni, declare that:

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

Khume Mtshweni

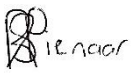
Ecologist

The Biodiversity Company

August 2026

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

August 2026

6.3 Appendix C – Specialist CVs

Khume Mtshweni

Pr Sci Nat 138592 +27 63 772 7501 khume@thebiodiversitycompany.com

PROFILE SUMMARY

Environmental and ecological specialist with 8 years' consulting experience, with international working experience. Specialist experience in mining, engineering, agriculture, renewable energy, and private sector developments. Project management of national multi-disciplinary projects. Provides specialist guidance, technical support, and facilitation for compliance with in-country legislative requirements. Registered Pr Sci Nat with the South African Council for Natural Scientific Professions.

PERSONAL INFO

Nationality: South African

Date of birth: 06 August 1994

EXPERIENCE

Comprehensive Wetland assessments

Rehabilitation Plans and Monitoring

Environmental Management Programmes (EMP)

Surface and Ground water Biomonitoring

Faunal and Floral Assessments

SKILLS

- ✓ Ecology
- ✓ Rehabilitation
- ✓ Offsets
- ✓ Monitoring & Management Plans

LANGUAGES

English – Proficient
Afrikaans – Proficient
Sepedi – Proficient
Isizulu – Proficient
Isindebele – Proficient
Sesotho – Proficient
Tsonga - Conversational

Signed: Khume Mtshweni

ACADEMIC QUALIFICATIONS

University of Johannesburg (2020): MAGISTER SCIENTIAE (MSc) - Aquatic Health

University of Johannesburg (2017): BACCALAUREUS SCIENTIAE CUM HONORIBUS (Hons) – Zoology

University of Johannesburg (2016): BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Zoology and Physiology.

PROFESSIONAL EXPERIENCE

Apr 2023 – Present	**The Biodiversity Company** Ecology
March 2021 – March 2023	**Milnex CC** Ecologist / Manager
Jan 2017 – Jul 2020	**Golder Associates** Graduate Intern / Freshwater Ecology

INTERNATIONAL EXPERIENCE

Angola, Lesotho, South Africa

Rian Pienaar

Pr Sci Nat 135544 +27 78 505 0201 rian@thebiodiversitycompany.com

PROFILE SUMMARY

Environmental scientist and Pri Sci Nat (SACNASP 135544) with ~5+ years' specialist consulting experience across Southern Africa. Specialist expertise in wetland delineation and ecological assessments, wetland offset strategy design, rehabilitation and monitoring plans, as well as soil classification and agricultural potential assessments. Experienced in delivering high-quality field surveys and technical reporting aligned with in-country legislative requirements and international lender standards, and currently manages the operations at TBC.

PERSONAL INFO

Nationality: South African

Date of birth: 23 May 1994

EXPERIENCE

Environmental Impact Assessments (EIA)

Environmental Management Programmes (EMP)

Project Management

Logistics

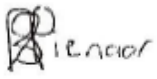
SKILLS

- ✓ Wetland functional assessments
- ✓ Ecology
- ✓ Rehabilitation
- ✓ Monitoring & Management Plans

LANGUAGES

English – Proficient

Afrikaans – Proficient



Signed: Rian Pienaar

ACADEMIC QUALIFICATIONS

North-West University (2020): MASTER OF SCIENCE (MSc) – Environmental Sciences (Cum Lauda):
Title: The use *Clarias gariepinus* and associated helminthic parasites as bio-indicators of metal pollution in a subtropical ecosystem.

North-West University (2018): BACHELOR OF SCIENCE HONOURS IN ENVIRONMENTAL SCIENCE – Aquatic Ecosystem Health

North-West University (2018): BACHELOR OF SCIENCE IN ENVIRONMENTAL AND BIOLOGICAL SCIENCES – Zoology and Microbiology

PROFESSIONAL EXPERIENCE

Sept 2020 – Present **The Biodiversity Company**
Wetland Ecology

Jan 2018 – Dec 2018 **National Aquatic Bioassay Facility (NABF)**
Intern

INTERNATIONAL EXPERIENCE

South Africa, Mozambique, Botswana, Eswatini