



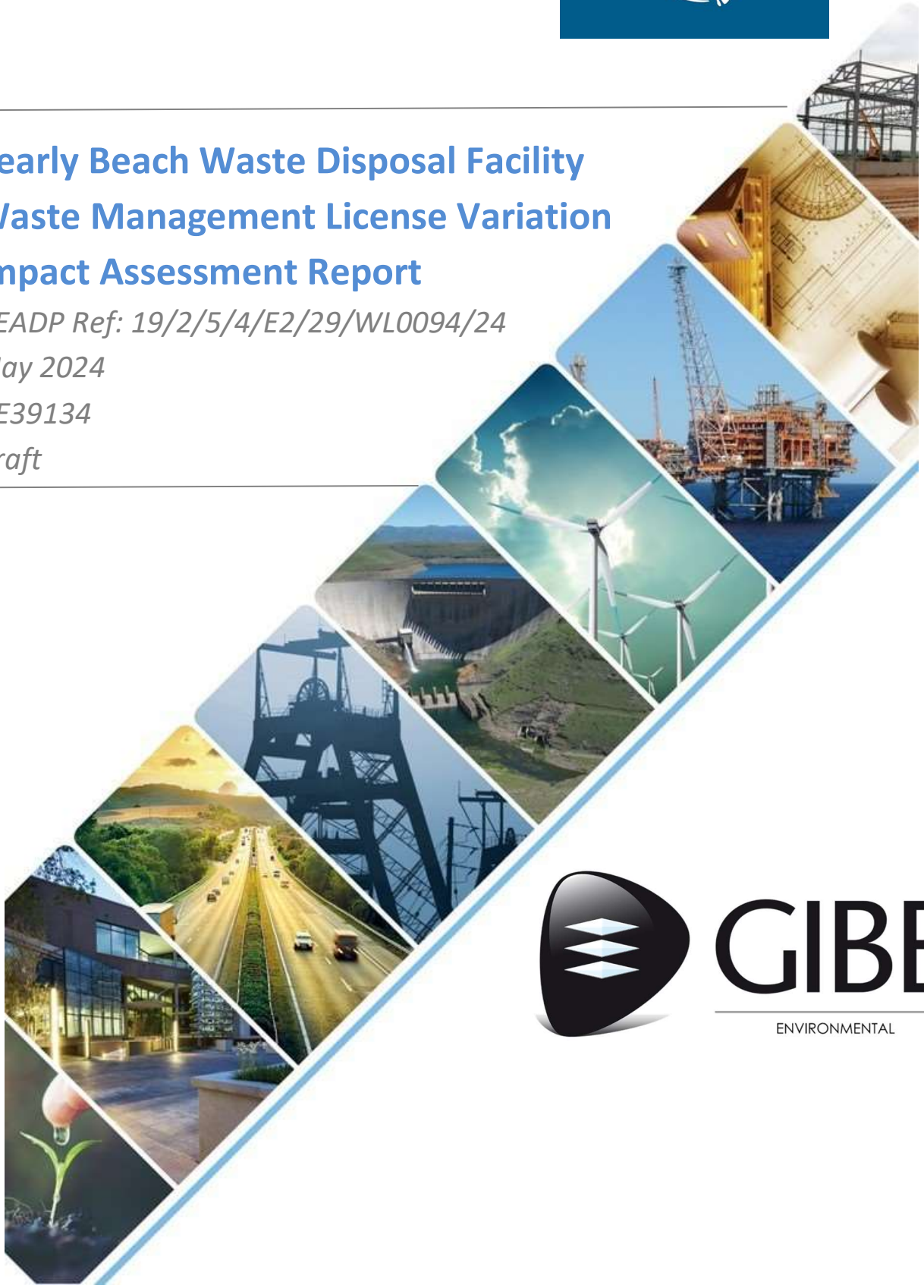
Pearly Beach Waste Disposal Facility Waste Management License Variation Impact Assessment Report

DEADP Ref: 19/2/5/4/E2/29/WL0094/24

May 2024

GE39134

Draft



GIBB

ENVIRONMENTAL

Pearly Beach Waste Disposal Facility

Waste Management License Variation Impact Assessment Report

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Preliminary

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Distribution

Copies to:

Copy 1 of 2	Mr Craig Mitchell, Overstrand Municipality
Copy 2 of 2	Mr Lance McBain-Charles, Department of Environmental Affairs and Development Planning

Abbreviations / Acronyms / Definitions

BAR	Basic Assessment Report
CA	Competent Authority
CRR	Comments and Responses Report
DEA	Department of Environmental Affairs
DEADP	Western Cape Department of Environmental Affairs and Development Plann
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act (Act 73 of 1989)
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Area
GIBB	GIBB Environmental (Pty) Ltd
I&Aps	Interested and Affected Parties
NEM: WA	National Environmental Management Waste Act (Act No 59 of 2008)
NEMA	National Environmental Management Act (Act No 107 of 1998)
NWA	National Water Act (Act No 36 of 1998)

PPP	Public Participation Plan
R&EIM	Remediation and Emergency Incident Management
SDF	Spatial Development Framework
WDF	Waste Disposal Facility
WML	Waste Management Licence
WUL	Water Use Licence
WWTW	Waste Water Treatment Works

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1 Introduction

1.1 Project Background

GIBB Environmental (Pty) Ltd (GIBB) was appointed by the Overstrand Local Municipality (OLM) as independent Environmental Assessment Practitioner (EAP) to undertake an application for the surrendering of the Waste Management License (WML) for the Pearly Beach Waste Disposal Facility (WDF). The WDF is located on Portion 4 of Farm Kleyn Hagel Kraal No. 321, Pearly Beach, Overstrand Local Municipality, Western Cape Province.

The Pearly Beach WDF is a historic site established in 1989, operated by the OLM, that was used mostly for the disposal of building rubble and garden waste. The site received a WML for closure in September 2014 (Ref No.: 19/2/5/1/E2/28/WL0048/14). A Variation WML for closure was issued for the site in May 2019 to extend the validity of the WML (Ref No.: 19/2/5/4/E2/29/WL0021/19). After the site received a WML for closure in 2014, an Environmental Authorisation (EA) was issued for the site (dated November 2014, Ref No.: 16/3/1/1/E2/29/2083/14) for the development of a new land-use, the Eluxolweni Waste Water Treatment Works (WWTW) on the same property. Construction of the WWTW commenced in February 2015 and was completed in July 2015. It is during the construction of the WWTW that the entire waste body of the Pearly Beach WDF was removed and disposed of at the Gansbaai landfill site.

Since the entire waste body of the Pearly Beach WDF was removed during the construction and development of the WWTW, the OLM identified the need to commence a process for the surrendering the WML as the closure activities approved in terms of the WML were no longer applicable. An initial pre-application meeting to discuss the surrendering of the WML was held with the Department of Environmental Affairs and Development Planning (DEADP) on 17 March 2021. Discussions at the meeting highlighted the need to obtain records and information of the waste removal process. A process was subsequently undertaken by GIBB and the OLM to source all available records and information related to the waste removal process. The records and information obtained were submitted to DEADP on 07 October 2021 whereafter a meeting was held with the DEADP to discuss the information submitted. The DEADP confirmed in letter correspondence dated 15 December 2021 their satisfaction with the information submitted but however commented that the sub-directorate: Remediation and Emergency Incident Management (R&EIM) confirm which contaminated land assessments should be undertaken. Following discussions and consultations with the Sub-Directorate it was confirmed that a Phase I Environmental Site Assessment (ESA) be undertaken for the site.

A Phase I ESA was undertaken in June 2022 by SLR Consulting (SLR). The study concluded that no potentially completed Source(S)-Pathway(P)-Receptor(R) linkages were identified and as such no risk to human health or the environment were identified. No further studies were identified and recommended by SLR.

The table below summarises key activities that have been undertaken in the WML variation process to facilitate the surrendering of WML to date.

Table 1-1: Timeline of project to date

Date:	Activity
1989	Site operated for approximately 22 years.
2011	Use of the site ceased.
September 2014	Site received WML (Ref No.: 19/2/5/1/E2/28/WL0048/14) for closure.
November 2014	New land-use (Eluxolweni WWTW) receives Environmental Authorisation (Ref No.: 16/3/1/1/E2/29/2083/14).
February 2015	Commencement of construction of the WWTW
July 2015	Completion of construction of the WWTW
May 2019	Site receive Variation WML (Ref No.: 19/2/5/4/E2/29/WL0021/19) for closure.
March 2021	Initial Pre-application meeting was held with DEADP to discuss surrendering the WML through a WML variation process.
October 2021	Submission of records and information related to the waste removal process to DEADP.
October 2021	Meeting with DEADP to discuss the records and information related to the waste removal process.
December 2021	DEADP issue letter correspondence and confirm their satisfaction with the information submitted.
June 2022	Phase I Site Assessment concluded that there were no risks to human health or the environment. Phase I Site Assessment submitted to DEADP sub-directorate R&EIM for review and consideration.
November 2022	Site inspection by the DEADP sub-directorate R&EIM.
December 2022	Decision issued by the DEADP sub-directorate R&EIM in terms of Section 38(1)(d) of the National Environmental Management: Waste Act, 2008 (NEMWA). The DEADP sub-directorate R&EIM determined that the site is not contaminated in terms of Section 38(1)(d) of NEMWA, 2008.
March 2023	Second Pre-application meeting held with DEADP.
09 May 2024	Application for the variation of the WML submitted.
15 May 2024	DEADP acknowledge receipt of Application for the variation of the WML submitted.

1.2 Purpose of this Report

This report has been compiled in support of an application for the variation (namely the surrendering) of the WML (Ref No.: 19/2/5/4/E2/29/WL0021/19) for the Pearly Beach WDF.

Considering that no waste remains on the site, typical closure activities such as the levelling, shaping, covering or capping of the waste are no longer required, and hence the activities related to the closure and decommissioning of the Pearly Beach WDF, as authorised in the WML, are no longer applicable. An application is therefore being made for the variation (surrendering) of the WML.

1.3 Details of Role Players

1.3.1 Applicant

The applicant is the OLM who own the Pearly Beach WDF.

Table 1-2: Applicant details

Applicant:	Overstrand Local Municipality		
Authorised signatory	Dean Gabriël Ian O'Neill on behalf of Overstrand Municipality		
Contact Person	Craig Mitchell		
Physical Address:	Magnolia Street, Hermanus, 7200		
Postal Address:	PO Box 20, Hermanus		
Postal code:	7200	Fax:	-
Telephone:	028 313 5045	Cell:	083 321 5591
E-mail:	cmitchell@overstrand.gov.za		

1.3.2 Environmental Assessment Practitioner

GIBB Environmental (Pty) Ltd has been appointed as the Environmental Assessment Practitioner (EAP) for the project.

Table 1-3: EAP details

Project EAP:	GIBB Environmental (Pty) Ltd		
Contact Person:	Mr. Donovan Henning		
Role in Project:	Project EAP		
Physical Address:	Head Office: Johannesburg 147 Bram Fischer Drive, Ferndale, Randburg, 2125		
Postal Address:	147 Bram Fischer Drive, Ferndale, Randburg, 2125		
Postal code:	2125	Fax:	011 781 1730
Telephone:	011 781 1730	Cell:	082 891 0604
Email:	donavanh@nemai.co.za , cc nbrink@gibbenvironmental.co.za		

1.3.3 Competent Authority

The competent authority for the WML Variation application is DEADP.

Table 1-4: Competent authority details

Competent Authority:	Department of Environmental Affairs and Development Planning (DEADP)
Case Officer:	Mr Eugene Pienaar

Competent Authority:	Department of Environmental Affairs and Development Planning (DEADP)		
Postal Address:	Private Bag X9086, Cape Town, 8000		
Postal code:	0001	Fax:	021 483 4425
Telephone:	021 483 5546	Cell:	-
Email:	Eugene.Pienaar@westerncape.gov.za		

1.3.4 Specialists

The specialist studies undertaken for this WML Variation application process are presented in the table below. These studies are summarised in Section 5 and full copies of the reports are included in **Appendix B**.

Table 1-5: Specialist studies

Specialist Study	Specialists	Prepared by	Comment
Phase I Environmental Site Assessment (ESA)	SLR Consulting (Pty) Ltd	Teboho Maidza and Brandon McGugan	The Phase I ESA was undertaken to assess the soil and groundwater conditions of the site and to determine whether the site pose any risk to human health or the environment.

1.4 Need, Desirability and Alternatives

The need to close the Pearly Beach WDF has been driven by the fact that the site was a historic unregulated site, was not formally licensed and designed with a liner system. The site was further located in an area earmarked for development.

The need to vary the WML (surrender the WML) related to the fact that a new land-use was developed and that the closure activities as approved in the WML were no longer applicable.

The OLM had two alternative options when considering the future of the Pearly Beach WDF:

Alternative 1: The site could be closed formally, which would include capping the waste body, or

Alternative 2 (the preferred alternative): the waste body could be excavated, removed from site and the WML surrendered.

The decision to proceed with alternative 2, remove the waste from the site and surrender the WML, rather than closing the site and capping the waste body, was motivated by the following:

- **Cost:** The capping and closing of the site would be associated with long-term monitoring and auditing requirements (as per the closure WML). The removal of the waste body, and the surrendering of the WML, would negate the need for any such long-term costs.
- **Liability:** If the Pearly Beach WDF remained in place and the WML in existence the OLM would be responsible for the site in the long term. This would present certain liabilities for

the OLM for example access control to the site would have to be managed, the site would have to be defended against informal settlement, alien vegetation would have to be controlled and erosion prevented. All of these would require resources.

- **Land use:** The removal of the waste body would potentially mean that the site could be better developed for other land uses. Historical waste bodies typically limit future use of the site to activities that do not require top-structures, such as open space or a sport field, however if the waste body is removed, the site could potentially be developed for higher value uses.

2 Site Description

2.1 Locality and Description

The site is located north of Pearly Beach in the OLM, in the Western Cape (refer to **Figure 2-1** below). Pertinent details of the site are summarised in the table below.

Table 2-1: Summary of Site Details

Location	Portion 4 of Farm Kleyn Hagel, Pearly Beach, Western Cape Province
Geographical coordinates	34° 39'1.38"S, 19° 29' 36.97"E
Site size	2 Ha
Historical land use	Waste Disposal Facility
Current land use	Eluxolweni WWTW
Ownership	Overstrand Local Municipality
Current zoning	Undetermined Zone (UZ) Utility Zone (UT)
Surrounding land use	North: Vacant, open space
	South: Vacant, open space
	East: Vacant, open space
	West: Vacant open space, residential development (300m) and sports field



Figure 2-1: Pearly Beach WDF Locality map (GIBB, 2024)

2.2 Description of Waste Body

As previously indicated, the Pearly Beach WDF was established in approximately 1989 and was closed in 2011. The site received historically building rubble and garden waste. The waste was disposed of in an open shape depression and was covered with sand during operations (refer to **Figure 2-4** and **Table 2-2** for the footprint of the waste body). The quantity of the waste disposed of at the Pearly Beach WDF was not known. Estimated waste disposal rates over an assumed operational period of 25 years are outlined in **Table 2-2** below. No buildings or infrastructure (i.e. offices, ablutions etc.) was located at the site. The WDF was overgrown prior to the removal of the waste and the development of a WWTW on the site (refer to **Figure 2-2** and **Figure 2-3** below).

Table 2-2: Coordinates of the site boundary

Corners	Latitude (S)	Longitude (E)
1	34°38'59.19"S	19°29'32.54"E
2	34°38'59.82"S	19°29'35.42"E
3	34°39'1.43"S	19°29'35.65"E
4	34°39'5.33"S	19°29'34.91"E
5	34°39'5.28"S	19°29'34.26"E
6	34°39'4.29"S	19°29'34.31"E
7	34°39'2.35"S	19°29'32.05"E
8	34°39'2.99"S	19°29'30.81"E
9	34°39'2.03"S	19°29'28.84"E
10	34°39'2.04"S	19°29'27.75"E
11	34°39'0.23"S	19°29'27.50"E
12	34°39'59.73"S	19°29'31.98"E

Table 2-3: Estimated waste disposal rates (AECOM SA, 2014)

Area (m ²)	Daily disposal rate (m ³)	Annual disposal rate (m ³)	Total Volume (m ³)
20 130	8.8	3 221	80 520



Figure 2-2: A general view of the Pearly Beach WDF in January 2015



Figure 2-3: A general view of the Pearly Beach WDF in January 2015

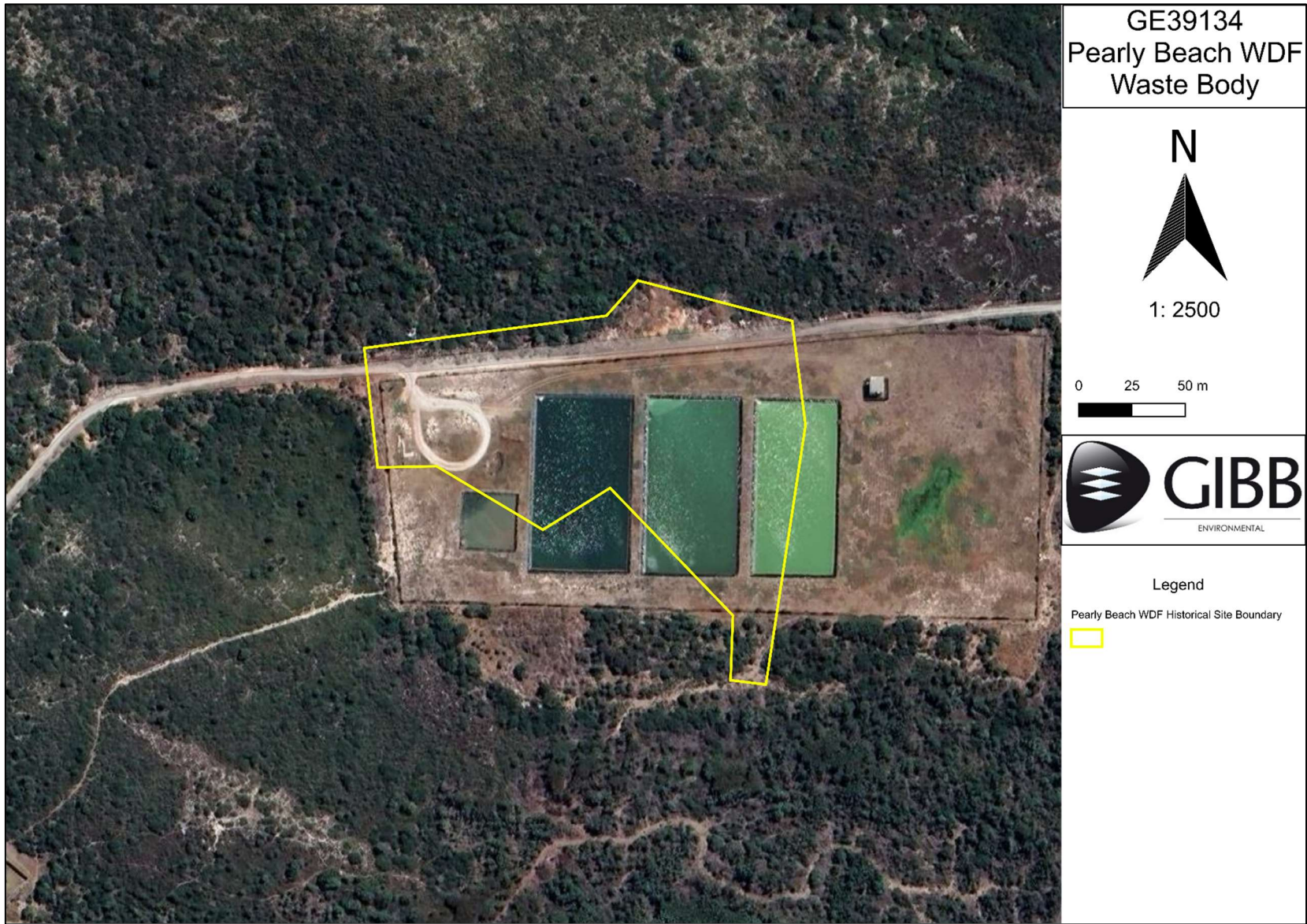


Figure 2-4: Pearly Beach WDF Waste Body (GIBB, 2024)

2.3 Sensitivity of Receiving Environment

The sensitivity of the site and surrounding area has been considered using information obtained from the Department of Forestry, Fisheries and the Environment (DFFE) online screening tool, as well as mapping on the CapeFarmMapper (Version 3). Images of the key features are shown in Figure 2-5, Figure 2-6 and Figure 2-7. Key points are:

- **Vegetation.** Most of the site falls within the Overberg Dune Strandveld which is considered Least Threatened. The south-eastern portion of the site falls within the Agulhas Limestone Fynbos which is considered Vulnerable. Despite the mapped designation, it is noted that the site was previously disturbed by the waste disposal activities and does not support such vegetation.
- **Rivers and wetlands.** The closest wetland to the site is located approximately 2.5km north-east of the site.
- **Conservation areas.** The closest protected area is the Uilkraalsmond Nature Reserve located approximately 2.44km west of the site.
- **CBA and ESA:** A small portion at the western and eastern boundary of the site falls within a Critical Biodiversity Area (CBA) (Terrestrial). Considering the disturbed nature of the site, it is unlikely to be worthy of the classification of a CBA.

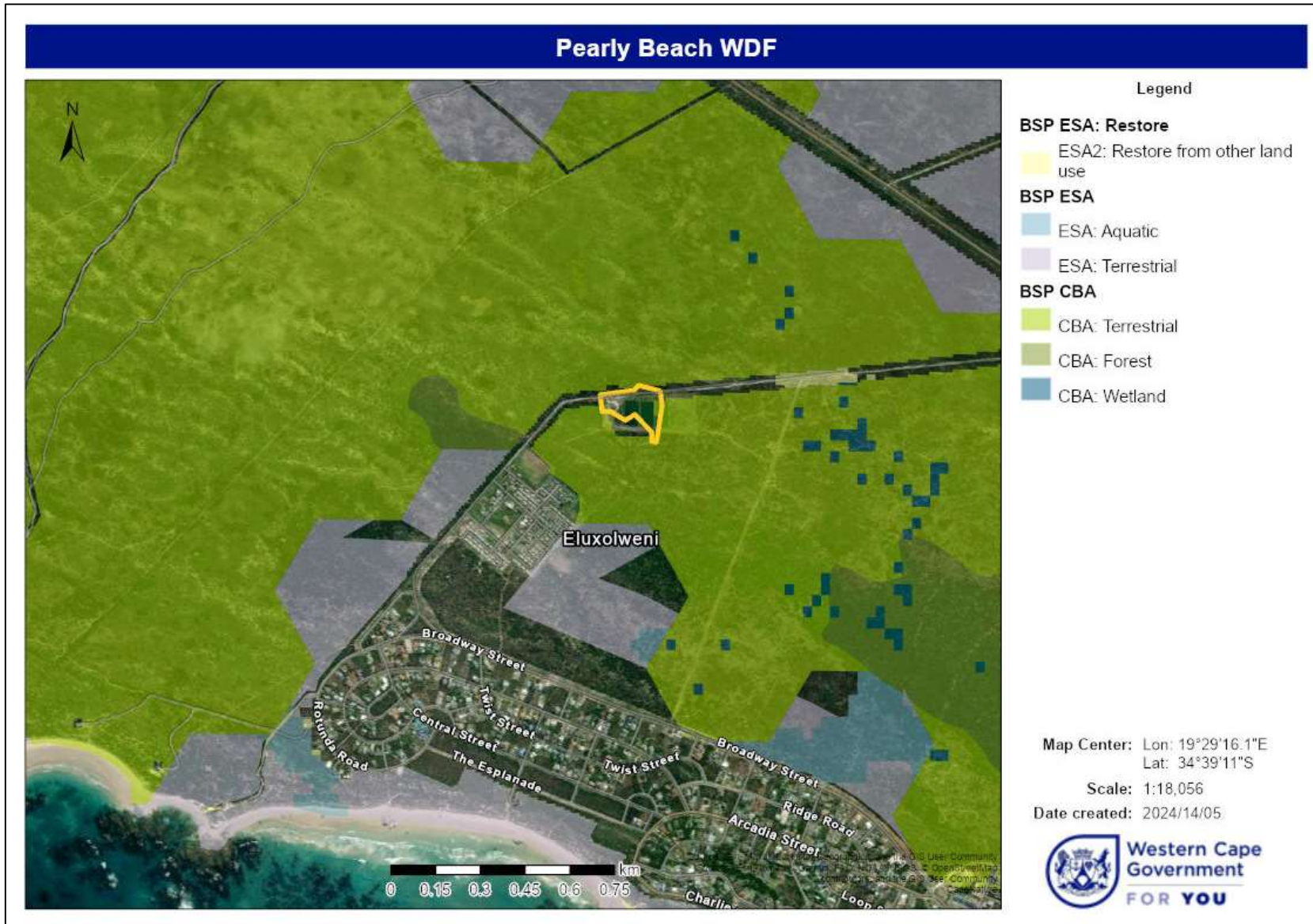


Figure 2-5: Pearly Beach WDF (yellow outline) showing protected areas, CBAs and ESAs (mapped with CapeFarmMapper).

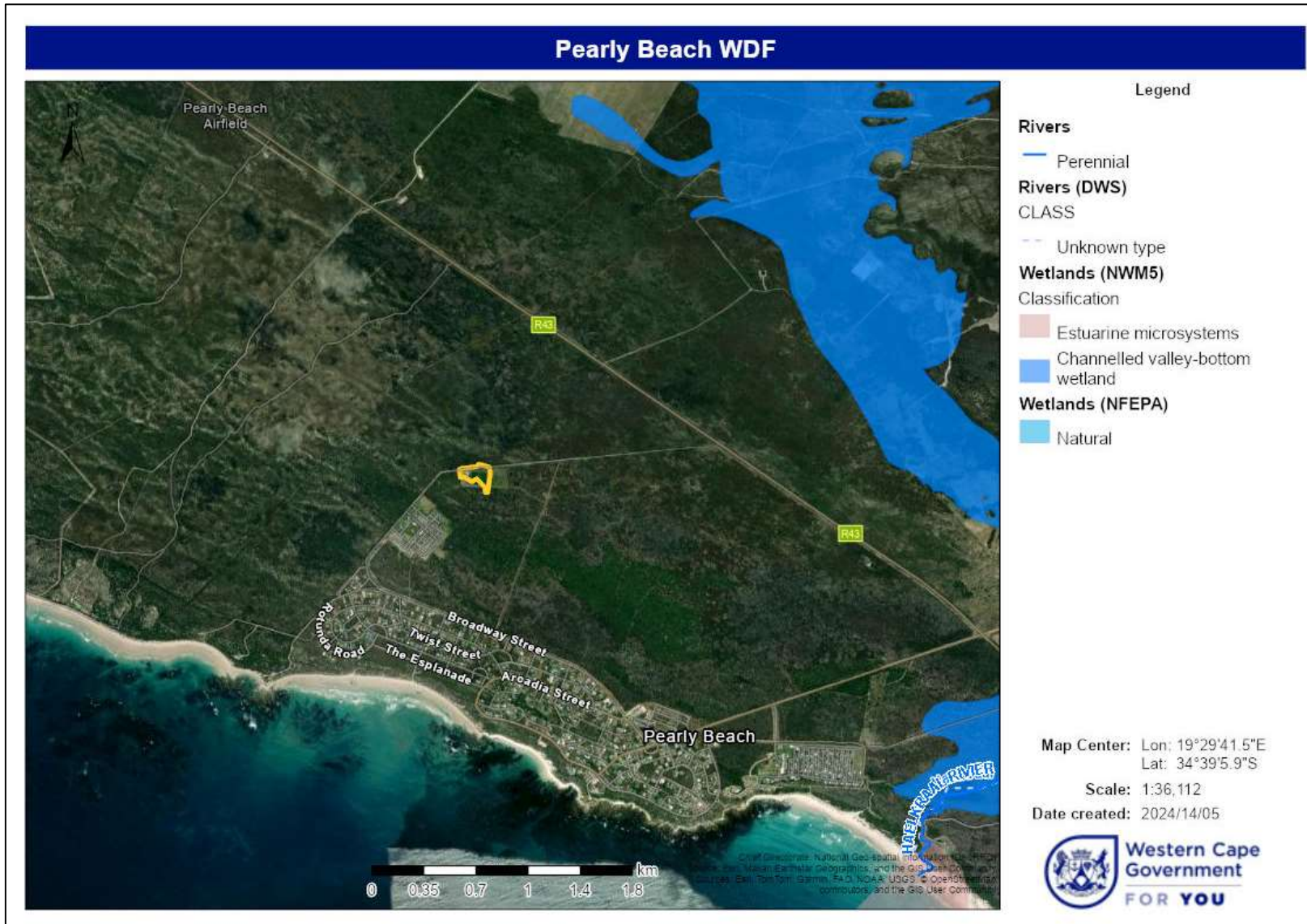


Figure 2-6: Pearly Beach WDF (yellow outline) showing surface water features (mapped with CapeFarmMapper).

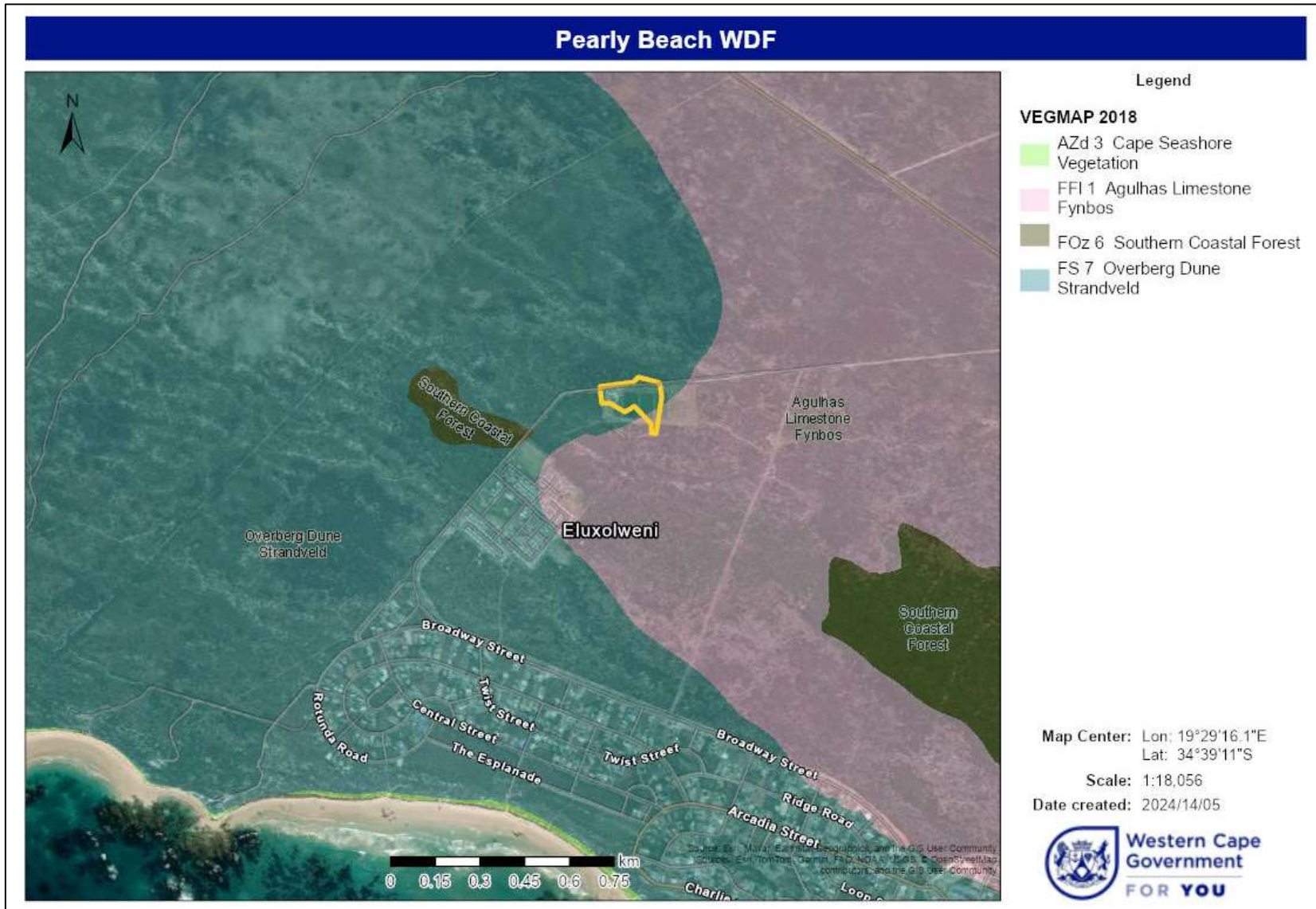


Figure 2-7: Pearly Beach WDF (yellow outline) showing vegetation types (mapped with CapeFarmMapper).

3 *Legislative Framework*

The activities associated with the removal of the waste and the variation (surrendering) of the WML were considered in terms of:

- National Environmental Management Act (Act 108 of 1998) (NEMA)
- National Environmental Management: Waste Act (Act 59 OF 2008) (NEMWA)
- National Water Act (Act 36 of 1998) (NWA).

3.1 **National Environmental Management Act (Act 108 of 1998)**

The activity of removing the waste body was not deemed to trigger any listed activities in term of the NEMA EIA Regulations 2014. The excavation and stockpiling activities were limited to the WDF area and vehicle access to the site was via existing roads. The works did not require the clearing of any areas of vegetation. An Environmental Control Officer (ECO) was employed during the waste removal process and the construction of the WWTW to ensure that the requirements of the EMPr were adhered to.

The variation (surrendering) of the WML is undertaken in terms of Chapter 5, Regulation 31 and 32 of the 2014 (as amended) EIA Regulations which regulate Part 2 (substantive) amendments.

3.2 **National Environmental Management: Waste Act (Act 59 of 2008)**

The removal of waste, the transportation thereof and the disposal of waste at a licensed landfill site, as was undertaken for this project, did not in itself trigger any of the listed activities as per the National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA).

The NEMWA, specifically sections 35 to 41, governs the process of identifying and managing contaminated land, and hence was applicable in this case. The National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 467 of 2013) defines the soil screening values (SSV) that are applicable when site assessments are undertaken, and these were applied during the Phase I Environmental Site Assessment undertaken as part of this study.

3.3 **National Water Act (Act 36 of 1998)**

The site is located approximately 2.5km south-west of the closest wetland. The site is not located within the 500m regulated area of a watercourse and therefore no water use in terms of Section 21 of the National Water Act, 1998 (Act 36 of 1998) (NWA) was deemed applicable.

4 *Proposed WML Variation*

4.1 Variation Details

The Pearly Beach WDF is currently licensed for closure (Ref No.: 19/2/5/4/E2/29/WL0021/19). The variation does not relate to one specific condition within the license but rather the license in its entirety. The motivation for this being that if the entire waste body is removed, then none of the conditions applicable to closing and monitoring the WDF would remain applicable. The variation sought is the surrendering of the entire license.

4.2 Approach and Methodology

4.2.1 Specialist Studies

A specialist study was undertaken to inform the WML variation (surrendering) application, namely a Phase I Environmental Site Assessment. The specialist study is described in Section 5.

4.2.2 Consultation with Department of Environmental Affairs and Development Planning (DEADP)

The applicant, the OLM together with GIBB Environmental, has had numerous interactions with DEADP in the process of confirming requirements for this project. The following key consultation has been undertaken to date:

- 2021.03.17: Initial Pre-application meeting was held with DEADP: Waste Management Licensing to discuss surrendering the WML
- 2021.10.08: Submission of records and information related to the waste removal process to DEADP: Waste Management Licensing
- 2021.10.29: Meeting with DEADP: Waste Management Licensing to discuss the records and information related to the waste removal process
- 2021.12.15: Comment from DEADP: Waste Management Licensing regarding the records and information related to the waste removal process
- 2022.11.24: Site inspection of the Pearly Beach WDF by the DEADP Sub-Directorate: Remediation and Emergency Incident Management
- 2022.12.28: Decision issued by DEADP Sub-Directorate: Remediation and Emergency Incident Management in terms of Section 38(1)(d) of NEMWA
- 2023.03.13: Second Pre-application meeting held with DEADP: Waste Management Licensing.

Consultation with the relevant officials at the DEADP will continue throughout the duration of the project.

4.2.3 Consultation with Other State Departments

Other authorities will be provided with notification letters and invited to comment on this draft Variation report. These are listed below.

Table 4-1: Relevant Authorities Consulted

Department Name
Department of Environmental Affairs and Development Planning: Waste Management Licensing
Department of Environmental Affairs and Development Planning: Development Management
Department of Environmental Affairs and Development Planning: Air Quality Management
Department of Environmental Affairs and Development Planning: Sub-Directorate -Remediation and Emergency Incident Management
Heritage Western Cape
Department of Water and Sanitation
Cape Nature
Department of Transport and Public Works Western Cape

A full list of key stakeholders consulted to date is included in the I&AP database (refer to **Appendix C**). Copies of comments received and responses will be provided in the Comments and Responses Report (CRR) (refer to **Appendix C**).

4.3 Public Participation Process

A public participation process (PPP) will be undertaken as part of the WML surrendering process. The following steps will be undertaken.

Table 4-2: Planned Public Participation activities

Action	Comment
Advertise, site notices	The WML variation process will be advertised in two newspapers and notices will be erected on the site and in publicly accessible locations.
I&AP registration period	A period of 30 days will be provided for the public to register as Interested and Affected Parties (I&APs)
Draft Variation commenting period Report	This draft Variation Report will be made available in hard copy (local municipal offices) and online (GIBB Environmental website) for a period of 30 days for I&APs to review and comment on.
Final Variation report	All comments will be compiled into Comments & Response Report (CRR) and comments will be responded to. The Final variation report, together with this CRR will be submitted to the authorities. It will also be made available on the GE website.

The steps completed as part of the PPP process will be detailed below once the process has been executed.

5 Specialist Studies

A Phase I Environmental Site Assessment (SLR, Jun 2022) was undertaken to inform this WML variation application (refer to **Appendix B** for the attached report).

Details of the specialist study is provided below.

5.1 Phase I Environmental Site Assessment

5.1.1 Introduction

To comply with Part 8 of NEMWA, the DEADP Sub-Directorate: R&EIM requested that a Phase I ESA be undertaken.

5.1.2 Objectives and Scope of Work

The objective of the Phase I ESA was to assess the soil and groundwater conditions of the site. SLR developed a site assessment approach that aligns with the South African Framework for the Management of Contaminated Land. The scope included reviewing historical reports, limited supplemental soil and groundwater sampling and laboratory analysis for target compounds.

5.1.3 Methodology

The site assessment included soil and groundwater sampling. The soil sampling involved obtaining four soil samples by hand-auger at strategic locations at the site at a maximum depth of 2 meter below ground level (bgl). Three soil samples were collected within the historical waste body footprint area. A single control soil sample was collected at an adjacent location, outside of the waste body's footprint area, to assess background soil conditions. The soil samples collected were submitted to a laboratory for comprehensive screening of chemical determinants (refer to **Table 5-1** below).

Groundwater was sampled from two existing boreholes located south-west of the site. The groundwater samples collected were submitted to a laboratory for comprehensive screening of chemical determinants (refer to **Table 5-1** below).

Table 5-1: Soil and Groundwater Analysis Details (SLR, 2022)

Sample Matrix	Sample Name	Analytes
Soil	AH1, AH2, AH3 & Control 1	As, Ba, Cd, Co, Cr, Cu, Hg, Mn, Ni, Pb, Se, Zn, Chlorides (Cl); Electrical Conductivity (EC); Nitrate (as N), Nitrite (NO ₃ -N); pH; Potassium (K); Total Organic Carbon (TOC); Calcium (Ca); Fluoride (F); Magnesium (Mg); Sodium (Na); and Sulphate (SO ₄).

Sample Matrix	Sample Name	Analytes
Groundwater	BH1 & BH2	As, Ba, Cd, Co, Cr, Cu, Hg, Mn, Ni, Pb, Se, Zn, Alkalinity (P. Alk); Ammonia (NH3-N); Chemical Oxygen Demand (COD); Chlorides (Cl); Electrical Conductivity (EC); Nitrate (as N); Nitrite (NO3-N); pH; Potassium (K); Total Dissolved Solids (TDS); Calcium (Ca); Fluoride (F); Magnesium (Mg); Sodium (Na); and Sulphate (SO4).

5.1.4 Results and Conclusions

The soil analytical results indicated the presence of barium, calcium, chromium, magnesium, manganese, nickel, potassium, and sodium at concentrations below the soil screening criteria (SSVs). In addition, detected anions were registered at concentrations below the SSVs.

The groundwater analytical results indicated the presence of barium, calcium, magnesium, potassium, sodium, manganese, and zinc. The concentration of sodium, manganese, chloride, nitrate (as N) and the TDS exceeded the screening criteria (SANS 241). Since the groundwater is not used for portable purposes within a 1 km radius of the Site, groundwater ingestion was not considered a realistic exposure pathway.

A Conceptual Site Model (CSM) was developed and indicated that no complete source (S) – Pathway (P) – Receptor (R) linkages exist for the site. Building on this, a risk evaluation was undertaken (Refer to **Table 5-2** below) which concluded that no risk to human health and the environment existed. On this basis, the study concluded that there was no risk posed and no further site assessment work is recommended.

Table 5-2: Qualitative Risk Evaluation as undertaken in the Phase I Site Assessment (SLR, June 2022)

Sources	Pathways		Receptors			Risk Evaluation
	Medium	Release Mechanism	Type	Description	Exposure	Potentially complete S-P-R linkage?
<p>Site History & Analytical Results</p> <p>The Pearly Beach WDF was established in ±1989 and was closed in 2011. Historically the Site received only building rubble and garden waste from the local community. The waste body was removed in 2011, and a Wastewater Treatment Works (WWTP¹⁰) encompassing three waste stabilisation ponds was established at the Site. In addition, the WWTP deploys infiltration of effluent water to the aquifer through a series of well points.</p> <p>An assessment by SRK in May 2013 indicated the following:</p> <ul style="list-style-type: none"> • Groundwater levels ranged between 5 and 14 mbgl in the three drilled boreholes. • No groundwater users were identified within a 1km radius of the Site. Irrigation well points were identified at residential premises 2.7 km southeast of the Site. The groundwater flow direction was inferred to be in a south-easterly direction. • The superficial deposits of the Bredasdorp Group form the primary aquifer, which is low yielding with high salinities and unsuitable for domestic use. • The Table Mountain Group bedrock can be broadly classified as a secondary aquifer. • The aquifers at the Site are classified as highly vulnerable to contamination. <p>During the assessment by SLR in June 2022, the following was observed:</p> <ul style="list-style-type: none"> • The soil analytical results indicated the presence of barium, calcium, chromium, magnesium, manganese, nickel, potassium and sodium in the soil samples obtained from the Site at concentrations below all the soil screening criteria (SSVs). • The groundwater analytical results indicated the presence of barium, calcium, magnesium, potassium, sodium, manganese, and zinc. The concentration of sodium, manganese, chloride, nitrate (as N) and the TDS exceeded the aesthetic screening criteria (SANS 241). 	Soil	Leaching of metals and anions	Groundwater (Aquifer)	The concentrations of the metals and anions detected in the soil samples were below the SSVs. As such, no risk to the aquifer was identified.	Impact to groundwater	This S-P-R linkage is considered incomplete.

6 Environmental Management Programme

An environmental management programme (EMPr) (AECOM, 2014) was drafted for the closure of the Pearly Beach WDF site at a time when the closure was expected to include capping of the waste body and remediation of the site. The EMPr is presented in the **Appendix D**.

7 Impact Assessments

7.1 Potential Impacts

A specialist study was commissioned to assess the impact of the removed waste on the underlying soil. This was key for determining impacts associated with its development. In addition, the EAP has considered other potential impacts associated with the removal of the waste from the site.

7.2 Methodology

Subsequent to the assessment conducted by the specialist team, GIBB Environmental has reviewed the impacts identified and assessed the inherent and residual risk posed to the receiving environment pre- and post- the application of mitigation measures. The objective of the assessment of impacts is to identify and assess all the significant impacts that may arise as a result of the proposed development i.e. the changes to the receiving environment which result in consequences that are of importance during the decision-making process.

For each of the main project phases, the existing and potential future impacts and benefits (associated only with the intended activity) were described using the criteria listed in **Table 7-1** below. This was done in accordance with Government Notice R.326, promulgated in terms of Section 24 of the NEMA and the criteria drawn from the IEM Guidelines Series, Guideline 5: Assessment of Alternatives and Impacts, published by the DEAT (April 1998).

The assignment of ratings has been undertaken based on past experience of the EIA team, as well as through research. Subsequently, mitigation measures have been identified and considered for each impact and the assessment repeated in order to determine the significance of the residual impacts (the impact remaining after the mitigation measure has been implemented).

Table 7-1: Proposed Criteria and Rating Scales which were used in the Assessment of the Potential Impacts

Criteria	Rating Scales	Notes
Nature	Positive	An evaluation of the effect of the impact related to the proposed development.
	Negative	
Extent	Footprint	The impact only affects the area in which the proposed activity will occur.
	Site	The impact will affect only the development area.

Criteria	Rating Scales	Notes
	Local	The impact affects the development area and adjacent properties.
	Regional	The effect if the impact extends beyond municipal boundaries.
	National	The effect if the impact extends beyond more than 2 regional/ provincial boundaries.
	International	The effect if the impact extends beyond country borders.
Duration	Temporary	The duration of the impact will last 0-6 months.
	Short term	The duration of the impact will last 6-18 months.
	Medium-term	The duration of the impact will last 18 months-5 years.
	Long term	The duration of the impact will last more than 5 years.
Severity	High negative	The severity of the impact is rated as High negative as the natural, cultural or social functions and processes are altered to the extent that the natural process will temporarily or permanently cease; and valued, important, sensitive or vulnerable systems or communities are substantially affected.
	Moderate negative	The severity of the impact is rated as Moderate negative as the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected
	Low negative	The severity of the impact is rated as Low negative as the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected
	Low positive	The severity of the impact is rated as Low positive as the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally improved
	Moderate positive	The severity of the impact is rated as Moderate positive as the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are positively affected
	High positive	The severity of the impact is rated as High positive as the natural, cultural or social functions and processes are altered to the extent that valued, important, sensitive or vulnerable systems or communities are substantially positively affected.
Potential for impact on irreplaceable resources	No	No irreplaceable resources will be impacted.
	Yes	Irreplaceable resources will be impacted.
Consequence	Extremely detrimental	A combination of extent, duration, intensity and the potential for impact on irreplaceable resources.
	Highly detrimental	
	Moderately detrimental	
	Slightly detrimental	
	Negligible	
	Slightly beneficial	
	Moderately beneficial	
	Highly beneficial	

Criteria	Rating Scales	Notes
	Extremely beneficial	
Probability (the likelihood of the impact occurring)	Unlikely	It is highly unlikely or less than 50 % likely that an impact will occur.
	Likely	It is between 50 and 75 % certain that the impact will occur.
	Definite	It is more than 75 % certain that the impact will occur, or it is definite that the impact will occur.
Significance	Very high - negative	A function of Consequence and Probability.
	High - negative	
	Moderate - negative	
	Low - negative	
	Very low	
	Low - positive	
	Moderate - positive	
	High - positive	
	Very high - positive	

Table 7-2: Explanation of Assessment Criteria

Criteria	Explanation
Nature	This is an evaluation of the type of effect the construction, operation and management of the proposed development would have on the affected environment. Will the impact change in the environment be positive, negative or neutral?
Extent or Scale	This refers to the spatial scale at which the impact will occur. Extent of the impact is described as: footprint (affecting only the footprint of the development), site (limited to the site) and regional (limited to the immediate surroundings and closest towns to the site). Extent or scale refers to the actual physical footprint of the impact, not to the spatial significance. It is acknowledged that some impacts, even though they may be of small extent, are of very high importance, e.g. impacts on species of very restricted range. In order to avoid “double-counting”, specialists have been requested to indicate spatial significance under “intensity” or “impact on irreplaceable resources” but not under “extent” as well.
Duration	The lifespan of the impact is indicated as temporary, short, medium and long term.
Severity	This is a relative evaluation within the context of all the activities and the other impacts within the framework of the project. Does the activity destroy the impacted environment, alter its functioning, or render it slightly altered?
Impact on irreplaceable resources	This refers to the potential for an environmental resource to be replaced, should it be impacted. A resource could possibly be replaced by natural processes (e.g. by natural colonisation from surrounding areas), through artificial means (e.g. by reseeded disturbed areas or replanting rescued species) or by providing a substitute resource, in certain cases. In natural systems, providing substitute resources is usually not possible, but in social systems, substitutes are often possible (e.g. by constructing new social facilities for those that are lost). Should it not be possible to replace a resource, the resource is essentially irreplaceable e.g. red data species that are restricted to a particular site or habitat of very limited extent.
Consequence	The consequence of the potential impacts is a summation of the above criteria, namely the extent, duration, intensity and impact on irreplaceable resources.
Probability of occurrence	The probability of the impact actually occurring based on the professional experience of the specialist with environments of a similar nature to the site and/or with similar projects. It is important to distinguish between probability of the impact occurring and probability that the activity causing a potential impact will occur. Probability is defined as the probability of the impact occurring, not as the probability of the activities that may result in the impact.
Significance	Impact significance is defined to be a combination of the consequence (as described below) and the probability of the impact occurring. The relationship between

Criteria	Explanation
	<p>consequence and probability highlights that the risk (or impact significance) must be evaluated in terms of the seriousness (consequence) of the impact, weighted by the probability of the impact actually occurring.</p> <p>In simple terms, if the consequence and probability of an impact is high, then the impact will have a high significance. The significance defines the level to which the impact will influence the proposed development and/or environment. It determines whether mitigation measures need to be identified and implemented and whether the impact is important for decision-making.</p>
Degree of confidence in predictions	Specialists and the EIR team were required to provide an indication of the degree of confidence (low, medium or high) that there is in the predictions made for each impact, based on the available information and their level of knowledge and expertise. Degree of confidence is not taken into account in the determination of consequence or probability.
Mitigation measures	Mitigation measures are designed to reduce the consequence or probability of an impact or to reduce both consequence and probability. The significance of impacts has been assessed both with mitigation and without mitigation.

Table 7-3: Impact Assessment Criteria and Rating Scales

Duration		Extent		Irreplaceable Resources		Severity		Probability		Consequence (Duration+Extent+Irr) x Severity =		Significance	
1	Temporary	1	Footprint	1	Yes	-3	High - negative	0	Improbable	-25 to -33	Extremely detrimental	-49 to -66	Very high - negative
2	Short term	2	Site	0	No	-2	Moderate negative	1	Probable	-19 to -24	Highly detrimental	-37 to -48	High - negative
3	Medium-term	3	Local			-1	Low -negative	2	Definite	-13 to -18	Moderately detrimental	-25 to -36	Moderate - negative
4	Long term	4	Regional			0	Negligible			-7 to -12	Slightly detrimental	-13 to -24	Low - negative
		5	National			1	Low -positive			0 to -6	Negligible	0 to -12	Very low - negative
		6	International			2	Moderate positive						
						3	High - positive			0 to 6	Negligible	0 to 12	Very Low - positive
										7 to 12	Slightly beneficial	13 to 24	Low - positive
										13 to 18	Moderately beneficial	25 to 36	Moderate - positive
										19 to 24	Highly beneficial	37 to 48	High - positive
										25 to 33	Extremely beneficial	49 to 66	Very high - positive

7.2.1 Ascribing Significance for Decision-Making

The best way of expressing the environmental costs/impacts and the inherent benefit implications for decision-making is to present them as risks. Risk is defined as the consequence (implication) of an event as a function of the probability (likelihood)¹ of that event. Many risks are accepted or tolerated on a daily basis because even if the consequence of the event is serious, the likelihood that the event will occur is low. A practical example is the consequence of a parachute not opening, is potentially death but the likelihood of such an event happening is so low that parachutists are prepared to take that risk and hurl themselves out of an aeroplane. The risk is low because the likelihood of the consequence is low even if the consequence is potentially severe.

It is also necessary to distinguish between the event itself (as the cause) and the consequence. Again, using the parachute example, the consequence of concern in the event that the parachute does not open is serious injury or death, but it does not necessarily follow that if a parachute does not open that the parachutist will die.

Various contingencies are provided to minimise the likelihood of the consequence (serious injury or death) in the event of the parachute not opening, such as a reserve parachute. In risk terms this means distinguishing between the inherent risk (the risk that a parachutist will die if the parachute does not open) and the residual risk (the risk that the parachutist will die if the parachute does not open but with the contingency of a reserve parachute) i.e. the risk before and after mitigation.

7.2.2 Consequence

The ascription of significance for decision-making becomes then relatively simple. It requires the consequences to be classified and the likelihood to be defined of that consequence. In the table below a scoring system for consequence ranking is shown. Two important features should be noted in the table, namely that the scoring doubles as the risk increases and that there is no equivalent ‘high’ score in respect of benefits as there is for the costs. This high negative score serves to give expression to the potential for a fatal flaw where a fatal flaw would be defined as an impact that cannot be mitigated effectively and where the associated risk is accordingly untenable. Stated differently, the high score on the costs, which is not matched on the benefits side, highlights that such a fatal flaw cannot be ‘traded off’ by a benefit and would render the proposed project to be unacceptable.

Table 7-4: Ranking of Consequence

Environmental Cost	Inherent risk
Human health – morbidity/mortality, loss of species	High
Material reductions in faunal populations, loss of livelihoods, individual economic loss	Moderate – high
Material reductions in environmental quality – air, soil, water. Loss of habitat, loss of heritage, amenity	Moderate

¹ Because ‘probability’ has a specific mathematical/empirical connotation the term ‘likelihood’ is preferred in a qualitative application and is accordingly the term used in this document.

Environmental Cost	Inherent risk
Nuisance	Moderate – low
Negative change – with no other consequences	Low
Environmental Benefits	Inherent benefit
Net improvement in human welfare	Moderate – high
Improved environmental quality – air, soil, water. Improved individual livelihoods	Moderate
Economic Development	Moderate – Low
Positive change – with no other consequences	Low

7.2.3 Likelihood

Although the principle is one of probability, the term ‘likelihood’ is used to give expression to a qualitative rather than quantitative assessment, because the term ‘probability’ tends to denote a mathematical/empirical expression. A set of likelihood descriptors that can be used to characterise the likelihood of the costs and benefits occurring, is presented in the table below.

Table 7-5: Likelihood categories and definitions

Likelihood Descriptors	Definitions
Highly unlikely	The possibility of the consequence occurring is negligible
Unlikely but possible	The possibility of the consequence occurring is low but cannot be discounted entirely
Likely	The consequence may not occur but a balance of probability suggests it will
Highly likely	The consequence may still not occur but it is most likely that it will
Definite	The consequence will definitely occur

It is very important to recognise that the likelihood question is asked twice. The first time the question is asked is the likelihood of the cause and the second as to the likelihood of the consequence. In the tables that follow the likelihood is presented of the cause and then the likelihood of the consequence is presented. A high likelihood of a cause does not necessarily translate into a high likelihood of the consequence. As such the likelihood of the consequence is not a mathematical or statistical ‘average’ of the causes but rather a qualitative estimate in its own right.

7.2.4 Residual Risk

The residual risk is then determined by the consequence and the likelihood of that consequence. The residual risk categories are shown in **Table 7-6** where consequence scoring is shown in the rows and likelihood in the columns. The implications for the decision-making of the different residual risk categories are shown in **Table 7-7**.

Table 7-6: Residual risk categories

		Residual risk				
		Moderate	High	High	Fatally flawed	
Consequence	High	Moderate	High	High	Fatally flawed	
	Moderate – high	Low	Moderate	High	High	High
	Moderate	Low	Moderate	Moderate	Moderate	Moderate

	Moderate low –	Low	Low	Low	Low	Moderate
	Low	Low	Low	Low	Low	Low
		Highly unlikely	Unlikely but possible	Likely	Highly likely	Definite
Likelihood						

Table 7-7: Implications for decision-making of the different residual risk categories

Rating	Nature of implication for Decision – Making
Low	The project can be authorised with a low risk of environmental degradation
Moderate	The project can be authorised but with conditions and routine inspections
High	The project can be authorised but with strict conditions and high levels of compliance and enforcement
Fatally Flawed	The project cannot be authorised

7.3 Impact Assessment

Potential impacts associated with the removal of the waste body and the subsequent surrendering of the waste license have been considered. The impacts have been categorised according to the respective project phases (pre-construction, construction, operational, decommissioning) during which they will occur.

It must be noted that in the event that this WML variation is not approved the OLM would remain bound to the conditions of the existing WML, however the absence of waste at the site would render most of the conditions of the closure WML redundant and not enforceable.

7.3.1 Design/Planning/Pre-Construction Phase

The pre-construction phase would, in this case, refer to the site activities that were undertaken prior to the waste body being excavated and removed. Such activities were limited to site inspections for surveying the waste body. No material impacts were anticipated with the pre-construction phase.

7.3.2 Construction Phase

The impacts associated with the construction phase (the removal of the waste body and rehabilitation) would typically be short term in nature since the construction works would not exceed 6 months. This phase is already completed, considering that the waste body has already been removed. The different impacts are presented in the tables below.

Table 7-8: Soil and Groundwater Impacts

SOIL AND GROUNDWATER CONTAMINATION	
PROJECT PHASE	<i>Construction Phase</i>
DIRECT IMPACT	<i>The excavation of the waste body may expose the waste to the elements e.g. rain, if not concluded timeously. This may contribute to leachate generation and contamination of soil and subsequently, groundwater.</i>
INDIRECT IMPACT	<i>Contamination could be transported through groundwater into the adjacent watercourses, leading to reduced surface water quality.</i>
CUMULATIVE IMPACT	--

DIMENSION	RATING	MOTIVATION	CONSEQUENCE	LIKELIHOOD
PRE-MITIGATION				
DURATION	1	<i>The duration of the impact is 0-6 months and as such is rated as Temporary</i>	-8	1
EXTENT	3	<i>The extent of the impact is rated as Local as it affects the development area and adjacent properties</i>		
SEVERITY	-2	<i>The severity of the impact is rated as Moderate negative as the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected</i>	Slightly Detrimental	Unlikely
IMPACT ON IRREPLACEABLE RESOURCES	0	<i>No irreplaceable resources will be impacted.</i>		
SIGNIFICANCE	-8	very low negative		
PROPOSED MITIGATION MEASURES				
<i>The excavated waste body should not be stockpiled on site for any extended period of time. Waste should be loaded directly into transport vehicles and taken to The Gansbaai landfill.</i>				
<i>Waste should be excavated incrementally from one end of the waste body to the other. Waste should not be removed in sporadic pockets as this may create depressions for the accumulation of stormwater.</i>				
<i>It is essential that the entire waste body is removed</i>				
<i>If there is any risk of off-site surface stormwater flowing into the working area, appropriate, temporary earth cut-off trenches or berms should be placed around the working area.</i>				
POST-MITIGATION				
DURATION	1	<i>The duration of the activity associated with the impact will last 0-6 months and as such is rated as Temporary</i>	-4	1
EXTENT	3	<i>The extent of the impact is rated as Local as it affects the development area and adjacent properties</i>		
SEVERITY	-1	<i>The severity of the impact is rated as Low negative as the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected</i>	Negligible	Unlikely
IMPACT ON IRREPLACEABLE RESOURCES	0	<i>No irreplaceable resources will be impacted.</i>		
SIGNIFICANCE	-4	very low negative		
CONFIDENCE LEVEL				
<i>High</i>				

Table 7-9: Heritage Impacts

DAMAGE OR DESTRUCTION OF HERITAGE RESOURCES				
PROJECT PHASE	Construction Phase			
DIRECT IMPACT	Damage or destruction of features constituting heritage significance due to the excavation of the waste body			
INDIRECT IMPACT	--			
CUMULATIVE IMPACT	--			
DIMENSION	RATING	MOTIVATION	CONSEQUENCE	LIKELIHOOD
PRE-MITIGATION				
DURATION	1	The duration of the impact is 0-6 months and as such is rated as Temporary	-3	1
EXTENT	1	The extent of the impact is rated as footprint as it only affects the area in which the proposed activity will occur		
SEVERITY	-1	The severity of the impact is rated as Low negative as the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected	Negligible	Unlikely
IMPACT ON IRREPLACEABLE RESOURCES	1	Irreplaceable resources will be impacted.		
SIGNIFICANCE	-3	very low negative		
PROPOSED MITIGATION MEASURES				
No heritage sites, archaeological remains or graves are known to occur within the working area because of its historical use as a landfill site.				
When sub-surface work commences, care should be taken not to damage or destroy any heritage material that maybe unearthed below the waste body. The chance find procedure must be put in place to deal with accidental finds				
Should any archaeological or physical cultural property heritage resources be exposed during excavation, works in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue				
Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site				
POST-MITIGATION				
DURATION	1	The duration of the impact is 0-6 months and as such is rated as Temporary	0	1
EXTENT	1	The extent of the impact is rated as footprint as it only affects the area in which the proposed activity will occur		
SEVERITY	0	Negligible	Negligible	Unlikely
IMPACT ON IRREPLACEABLE RESOURCES	1	Irreplaceable resources will be impacted.		
SIGNIFICANCE	0	very low negative		
CONFIDENCE LEVEL				
High				

Table 7-10: Nuisance Impacts

INCREASED NUISANCE DISTURBANCE				
PROJECT PHASE	Construction Phase			
DIRECT IMPACT	Potential increase in nuisance impacts such as dust generation, noise generation, litter, windblown waste and traffic congestion due to construction activities, soil excavation, and earth moving vehicles activities on, to and from the site. The closest residents to the site are located 280m of the waste body.			
INDIRECT IMPACT	--			
CUMULATIVE IMPACT	--			
DIMENSION	RATING	MOTIVATION	CONSEQUENCE	LIKELIHOOD
PRE-MITIGATION				
DURATION	1	The duration of the impact is 0-6 months and as such is rated as Temporary	-8	2
EXTENT	3	The extent of the impact is rated as Local as it affects the development area and adjacent properties		
SEVERITY	-2	The severity of the impact is rated as Moderate negative as the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected	Slightly Detrimental	Likely
IMPACT ON IRREPLACEABLE RESOURCES	0	No irreplaceable resources will be impacted.		
SIGNIFICANCE	-16	very low negative		
PROPOSED MITIGATION MEASURES				
Due to the presence of waste, no potable water should be used for dust suppression (as far as is practically possible). Alternative dust suppression methods (mainly avoidance) shall be implemented. Works should be prioritised for days with little to no wind, or when the wind is blowing from the west.				
Avoid unnecessary movement of construction vehicles				
Vehicle speeds must be limited to 20 km/h on any exposed surfaces on the site				
Exposed waste body is to be removed timeously and not left exposed unnecessarily. Rehabilitation should commence as soon as possible.				
Daily site inspections of dust levels should be undertaken.				
A procedure for recording and responding to complaint must be instituted. A sign with contact numbers of the site contractor should be placed on site.				
POST-MITIGATION				
DURATION	1	The duration of the impact is 0-6 months and as such is rated as Temporary	-4	2
EXTENT	3	The extent of the impact is rated as Local as it affects the development area and adjacent properties		
SEVERITY	-1	The severity of the impact is rated as Low negative as the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected	Negligible	Likely
IMPACT ON IRREPLACEABLE RESOURCES	0	No irreplaceable resources will be impacted.		
SIGNIFICANCE	-8	very low negative		
CONFIDENCE LEVEL				

High

Table 7-11: Visual Impacts

VISUAL CHARACTER				
PROJECT PHASE	Construction Phase			
DIRECT IMPACT	Change in visual character due to the presence of construction vehicles on the site. The site will be visible from the neighbouring residential area.			
INDIRECT IMPACT	--			
CUMULATIVE IMPACT	--			
DIMENSION	RATING	MOTIVATION	CONSEQUENCE	LIKELIHOOD
PRE-MITIGATION				
DURATION	1	The duration of the impact is 0-6 months and as such is rated as Temporary	-8	3
EXTENT	3	The extent of the impact is rated as Local as it affects the development area and adjacent properties		
SEVERITY	-2	The severity of the impact is rated as Moderate negative as the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected	Slightly Detrimental	Definite
IMPACT ON IRREPLACEABLE RESOURCES	0	No irreplaceable resources will be impacted.		
SIGNIFICANCE	-24	low – negative		
PROPOSED MITIGATION MEASURES				
The movement of construction vehicles must be restricted to only those areas necessary so as to minimise damage to adjacent natural vegetation,				
During construction, the site camp and working area should be kept clean and in a tidy condition.				
Construction should not occur at night or outside of working hours.				
POST-MITIGATION				
DURATION	1	The duration of the impact is 0-6 months and as such is rated as Temporary	-4	2
EXTENT	3	The extent of the impact is rated as Local as it affects the development area and adjacent properties		
SEVERITY	-1	The severity of the impact is rated as Low negative as the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected	Negligible	Likely
IMPACT ON IRREPLACEABLE RESOURCES	0	No irreplaceable resources will be impacted.		
SIGNIFICANCE	-8	very low negative		
CONFIDENCE LEVEL				
High				

7.3.3 Post-construction Phase

The proposed construction activity, namely the removal of the waste body, is by its nature a closure or decommissioning activity. Hence, there will be no operational or decommissioning stage as such, and post construction the site would essentially be considered decommissioned. The impacts below are anticipated to occur post construction.

Table 7-12: Soil and Groundwater Impacts

SOIL AND GROUNDWATER CONTAMINATION				
PROJECT PHASE	<i>Post construction phase</i>			
DIRECT IMPACT	<i>The historical waste body, once removed, will no longer pose the risk of leaching contaminants into the underlying soils and/or underlying aquifer. By removing the potential pollution source, this risk has been removed.</i>			
INDIRECT IMPACT	<i>Contamination could be transported through groundwater into the adjacent watercourses, leading to reduced surface water quality. By removing the potential pollution source, this risk has however been removed.</i>			
CUMULATIVE IMPACT	--			
DIMENSION	RATING	MOTIVATION	CONSEQUENCE	LIKELIHOOD
PRE-MITIGATION				
DURATION	1	<i>The duration of the impact associated with the activity will last 0-6 months and as such is rated as Temporary</i>	9	3
EXTENT	2	<i>The extent of the impact is rated as site as it will affect only the development area</i>		
SEVERITY	3	<i>The severity of the impact is rated as High positive as the natural, cultural or social functions and processes are altered to the extent that valued, important, sensitive or vulnerable systems or communities are substantially positively affected.</i>		
IMPACT ON IRREPLACEABLE RESOURCES	0	<i>No irreplaceable resources will be impacted.</i>		
SIGNIFICANCE	27	low positive	Slightly Beneficial	Definite
PROPOSED MITIGATION MEASURES				
<i>The activity in question, namely the removal of the waste body, will by nature of the fact that it will see the removal of a potential point source of pollution, cause a reduction in the risk soil and groundwater contamination. No other operational activities are therefore required.</i>				
POST-MITIGATION				
DURATION	1	<i>The duration of the impact associated with the activity will last 0-6 months and as such is rated as Temporary</i>	9	3
EXTENT	2	<i>The extent of the impact is rated as site as it will affect only the development area</i>		

SEVERITY	3	<i>The severity of the impact is rated as High positive as the natural, cultural or social functions and processes are altered to the extent that valued, important, sensitive or vulnerable systems or communities are substantially positively affected.</i>	Slightly Beneficial	Definite
IMPACT ON IRREPLACEABLE RESOURCES	0	<i>No irreplaceable resources will be impacted.</i>		
SIGNIFICANCE	27	low positive		
CONFIDENCE LEVEL				
<i>High</i>				

Table 7-13: Erosion impacts

EROSION DUE TO STORMWATER				
PROJECT PHASE	<i>Post construction Phase</i>			
DIRECT IMPACT	<i>Erosion due to poor stormwater management</i>			
INDIRECT IMPACT	--			
CUMULATIVE IMPACT	--			
DIMENSION	RATING	MOTIVATION	CONSEQUENCE	LIKELIHOOD
PRE-MITIGATION				
DURATION	4	<i>The duration the impact will last more than 5 years and as such is rated as Long Term</i>	-14	2
EXTENT	3	<i>The extent of the impact is rated as Local as it affects the development area and adjacent properties</i>		
SEVERITY	-2	<i>The severity of the impact is rated as Moderate negative as the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected</i>	Moderately Detrimental	Likely
IMPACT ON IRREPLACEABLE RESOURCES	0	<i>No irreplaceable resources will be impacted.</i>		
SIGNIFICANCE	-28	low – negative		
PROPOSED MITIGATION MEASURES				
<i>The rehabilitated area must be shaped so as to prevent ponding or pooling of water on the site. The site should be free draining.</i>				
<i>The rehabilitated area should be grassed with a mixture of local grass immediately following the construction completion</i>				
<i>The site should be inspected regularly to detect any signs of erosion. Where erosion is noted it must be repaired immediately.</i>				
POST-MITIGATION				
DURATION	4	<i>The duration of the impact will last more than 5 years and as such is rated as Long Term</i>	0	2
EXTENT	3	<i>The extent of the impact is rated as Local as it affects the development area and adjacent properties</i>		
SEVERITY	0	<i>Negligible</i>	Negligible	Likely
IMPACT ON IRREPLACEABLE RESOURCES	0	<i>No irreplaceable resources will be impacted.</i>		
SIGNIFICANCE	0	very low negative		

CONFIDENCE LEVEL
<i>Medium</i>

7.3.4 Impact Summary

Due to the fact that the Pearly Beach WDF was an existing site, and that the proposed works (waste body removal) will mean the main pollution point source will be removed, most of the typical impacts associated with WDFs (e.g. soil and groundwater impacts, odour and air quality impacts), would be significantly reduced by this undertaking.

Impacts associated with the construction phase i.e. the actual uplifting and transportation of waste and the rehabilitation of the site can be mitigated and hence are of minor significance. Hence all post mitigation impacts were determined to be low or very low significance.

The table below provides the projected significance ratings of all impacts pre- and post-mitigation measures being implemented.

Table 7-14: Potential Impacts Identified

Impact	Nature	Pre mitigation	Post mitigation
Design/Planning/Pre-Construction Phase			
None			
Construction Phase			
Soil and groundwater contamination	Negative	Very Low	Very Low
Heritage impacts	Negative	Very Low	Very Low
Nuisance disturbances (dust and noise)	Negative	Very Low	Very Low
Visual character	Negative	Low	Very Low
Post-construction phase			
Soil and groundwater contamination	Positive	Low	Low
Erosion	Negative	Low	Very Low

No fatal flaws were identified with the proposed activity and overall, the anticipated impact would be a positive one. Most significantly, the long-term benefits of the works would make the site available for a new land-use and the contribution that such uses (WWTW) would make to the local community in terms of service delivery.

It is therefore the recommendation of EAP that the application for the variation of the WML which would result in the surrendering of the WML is approved.

8 *References*

AECOM SA. 2014. Basic Assessment Report. Licence for Closure of Pearly Beach G: C: B+ Waste Disposal Facility (WDF), Overstrand Local Municipality, Western Cape.

Department of Environmental Affairs (DEA), 02 May 2014. National Norms and Standards for the Remediation of Contaminated Land and Soil Quality. Government of South Africa.

Department of Forestry, Fisheries & the Environment (DFFE), 07 May 2023. Environmental Affairs (DEA), 02 May 2014. National Norms and Standards for the Remediation of Contaminated Land and Soil Quality. Government of South Africa.

Screening Report for an Environmental Authorization as Required by the 2014 EIA regulations – Proposed Site Environmental sensitivity.

Government of South Africa. National Environmental Management: Waste Act (Act 59 of 2008).

SLR, Jun 2022. Phase 1 Assessment at former Pearly Beach Waste Disposal Site. Prepared for GIBB (Pty) Ltd. SLR Project No. 720.07035.00013