TRANS ATLANTIC DIAMONDS

FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING IN SEA CONCESSION AREA 11C BY TRANS ATLANTIC DIAMONDS (PTY) LTD

Part B: Environmental Management Programme

EA Application Ref. No.: WC30/5/1/1/2/10522 PR

April 2026

ANCHOR environmental

Cover photo: Anchor Environmental Consultants

FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING IN SEA CONCESSION AREA 11C BY TRANS ATLANTIC DIAMONDS (PTY) LTD

Part B: Environmental Management Programme

EA Application Ref. No.: WC30/5/1/1/2/10522 PR

April 2026

Report prepared for:

Trans Atlantic Diamonds (Pty) Ltd
Office 1603 Portside
4 Bree Street
Cape Town, Western Cape, 8001

TRANS ATLANTIC DIAMONDS

Report Prepared by:
Anchor Environmental Consultants (Pty) Ltd
8 Steenberg House, Silverwood Close, Tokai, South Africa
www.anchorenvironmental.co.za

ANCHOR environmental

Authors: Cheruscha Swart, Steve September and Michael Armitage

Citation: Swart C, September SC and Armitage MPA. 2026. Final *Basic Assessment Report for the proposed prospecting in Sea Concession Area 11C by Trans Atlantic Diamonds (Pty) Ltd. Part B: Environmental Management Programme*. Report no. 2348/6 prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. 58 pp.

PREFACE

This Basic Assessment Report (BAR) and associated Environmental Management Programme (EMPr), was first published in 2022 under Environmental Authorisation (EA) Application Ref. No.: WC30/5/1/1/2/10384 PR, with EA and a prospecting right (PR) subsequently being granted. As the PR was not renewed within the prescribed timeline, a resubmission application was submitted to the Department of Mineral and Petroleum Resources (DMPR) in December 2025, in terms of the National Environmental Management Act (NEMA, Act 107 of 1998), and the Mineral and Petroleum Resources Development Act (MPRDA; Act No. 28 of 2002).

This required and new Basic Assessment (BA) Process and circulation of updated reports (where relevant) during a new Public Participation Process (PPP). Minor updates to the draft BAR, EMPr, and specialist studies, were then made in March 2026 to reflect revised specialist information and other contextual details, such as legislation and practitioner information. These revisions did not alter the impact assessment, study findings, or overall conclusions and outcomes of the BA process.

The updated draft BAR, EMPr and all required supporting documentation, was thereafter published for public comment during the formal PPP, held between 19 March to 23:59 on 20 April 2026. Comments received from Interested and Affected Parties (I&APs) during this period were then addressed and used to inform necessary revisions to the reports (where relevant). This document constitutes the revised final EMPr for this resubmission process.

A note on document interpretation: To facilitate easy interpretation of this updated document—and to indicate where changes have been made in this final report since the March 2026 draft report—all significant alterations/updates have been highlighted in blue.

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: Trans Atlantic Diamonds (Pty) Ltd

TEL NO: +27 84 568 9204

FAX NO: n/a

POSTAL ADDRESS: Office 1603 Portside, 4 Bree Street, Cape Town, Western Cape, 8001

PHYSICAL ADDRESS: Office 1603 Portside, 4 Bree Street, Cape Town, Western Cape, 8001

FILE REFERENCE NUMBER SAMRAD: Ref. No. WC30/5/1/1/2/10522 PR

1 IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if, among others, the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application for Environmental Authorisation must (a) be prepared in a format that may be determined by the Competent Authority and (b) in terms of section 17 (1) (c) of the same regulation, the competent Authority must check whether the application has taken into account the minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings, as set out below, and ensure that the report is not cluttered with uninterpreted information and that it unambiguously represents the interpretation of the applicant.

2 OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

The objective of the basic assessment process is, through a consultative process, to –

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
(b) identify the alternatives considered, including the activity, location, and technology alternatives;
(c) describe the need and desirability of the proposed alternatives,
(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects, to determine:
    (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
    (ii) the degree to which these impacts—
        (aa) can be reversed;
        (bb) may cause irreplaceable loss of resources; and
        (cc) can be managed, avoided or mitigated;
(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
    (i) identify and motivate a preferred site, activity and technology alternative;
    (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
    (iii) identify residual risks that need to be managed and monitored.

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

Anchor/ AEC	Anchor Environmental Consultants (Pty) Ltd.
BAR	Basic Assessment Report
CA	Competent Authority
DFFE	Department of forestry, fisheries and the Environment (Formerly DEFF and DAFF)
DMPR	Department of Mineral Resources and Energy
DMPR	Department of Mineral and Petroleum Resources
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EBSA	Ecologically or Biologically Significant Marine Areas
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme Report
FLO	Fisheries Liaison Officer
IBA	Important Bird and Biodiversity Area
IEM	Integrated Environmental Management
IUCN	International Union for Conservation of Nature
MARPOL	The International Convention for the Prevention of Pollution from Ships
MBES	Multi Beam Echo Sounder
MMI	Marine Mammal Institute
MMSO	Marine Mammal and Seabird Observer
MPA	Marine Protected Area
MUCH	Maritime and Underwater Cultural Heritage
NBA	National Biodiversity Assessment
NEMA	National Environmental Management Act No. 107 of 1998, as amended
OMP	Operational Management Plan
PAM	Passive Acoustic Monitoring
ROV	Remotely Operated Vehicle
SAHRA	South African Heritage Resource Association
SAMLMA	South African Marine Linefish Management Association
SAMSA	South African Maritime Safety Authority
SANBI	South African National Biodiversity Institute
SAPFIA	South African Pelagic Fishing Industry Association
SBP	Sub-bottom profiler
SOPEP	Shipboard Oil Pollution Emergency Plan
TAC	Total allowable catch
TAD	Trans Atlantic Diamonds (Pty) Ltd

3 GENERAL INFORMATION

3.1 Prospecting Right Applicant

Name of the Applicant:	**Trans Atlantic Diamonds (Pty) Ltd**
Responsible Person	Talia Norvall
Contact number	+27 84 568 9204
Fax number:	n/a
Physical address:	Office 1603 Portside, 4 Bree Street, Cape Town, Western Cape, 8001
Postal address:	Office 1603 Portside, 4 Bree Street, Cape Town, Western Cape, 8001
Email address:	talia@transatlanticdiamonds.com
File reference number SAMRAD:	WC30/5/1/1/2/10522 PR

3.2 Details of the EAP

Name of The Practitioner	**Cheruscha Swart**
Contact number:	021 701 3420
Physical Address	Suite 8, Steenberg House, Silverwood Close, Steenberg Estate, Tokai, 7945
Postal address:	Suite 8, Steenberg House, Silverwood Close, Steenberg Estate, Tokai, 7945
Email address:	cher@anchorenvironmental.co.za

3.2.1 Expertise of the EAP.

Cheruscha holds a Master of Science (MSc) in Zoology, as well as an Honours (BSc Hons) and Bachelor of Science (BSc) degree in Biodiversity and Ecology from Stellenbosch University. She is a Registered Environmental Assessment Practitioner (EAP) and also a SACNASP registered scientist. See Appendix 1 of the BAR for more details.

- MSc (Cum Laude) Zoology; BSc (Hons) & BSc Biodiversity and Ecology
- EAPASA (Reg EAP no. 2021/3298)
- SACNASP Pr.Sci.Nat. Reg: 155305 (Environmental Science; Zoological Science)

3.2.2 Summary of the EAP's past experience.

(In carrying out the Environmental Impact Assessment Procedure)

Cheruscha has 14 years of research and consulting experience. At Anchor Environmental Consultants, she serves as a Senior Consultant and Head Environmental Assessment Practitioner (EAP), leading multiple projects. Her expertise includes Environmental Impact Assessments (EIAs), applications for prospecting rights, management plan development, environmental compliance monitoring, baseline and monitoring surveys, and specialist impact assessments, all undertaken across marine, coastal, estuarine and terrestrial environments. In addition, she has specialist expertise in marine invertebrate taxonomy and rocky shore surveys. Her project portfolio spans a wide range of sectors, including land-based and offshore prospecting, offshore mining, agriculture, land- and sea-based aquaculture, solar desalination, residential and commercial developments, conservation surveys for protected areas, and long-term monitoring of bays and ports along the South African coast. Cheruscha is the author of three peer-reviewed scientific publications and numerous scientific reports, with additional projects and publications currently in preparation.

4 INTRODUCTION

4.1 Project Background

Trans Atlantic Diamonds (Pty) Ltd (The Applicant) is a licensed rough diamond dealer since October 1986. They act as an independent, online rough diamond sales channel which connects both buyers and sellers, while providing a sales solution for producers, small artisanal miners and suppliers. With over thirty years of diamond industry experience, they are well recognised within the trade, and have pioneered tender and auction services across the globe.

Trans Atlantic Diamonds has reapplied for Prospecting Rights (PR) for the prospecting of diamonds, gemstones, heavy and industrial minerals, and ferrous, base and precious metals within offshore Sea Concession Area 11C (Ref. No. WC30/5/1/1/2/10522 PR). The application was submitted in December 2025 to the Department of Mineral and Petroleum Resources (DMPR) in terms of the National Environmental Management Act (NEMA; Act No. 107 of 1998) and the Mineral and Petroleum Resources Development Act (MPRDA; Act No. 28 of 2002). In terms of the EIA Regulations (2014), the application for EA requires a Basic Assessment (BA) process. This involves assessing the potential environmental impacts of the proposed prospecting activities, compiling the findings into a Basic Assessment Report (BAR) and an Environmental Management Programme (EMPr). Anchor Environmental Consultants (Pty) Ltd was appointed as the independent Environmental Assessment Practitioner (EAP) to assist with the current application.

4.2 Project Location

Sea Concession area 11C is located approximately 4 to 5km offshore of the Western Cape Coast, about 40 km north of Strandfontein. The concession covers an area of approximately 164 023 ha with its furthest boundary at the 200 m isobath (Figure 1 and Figure 2).

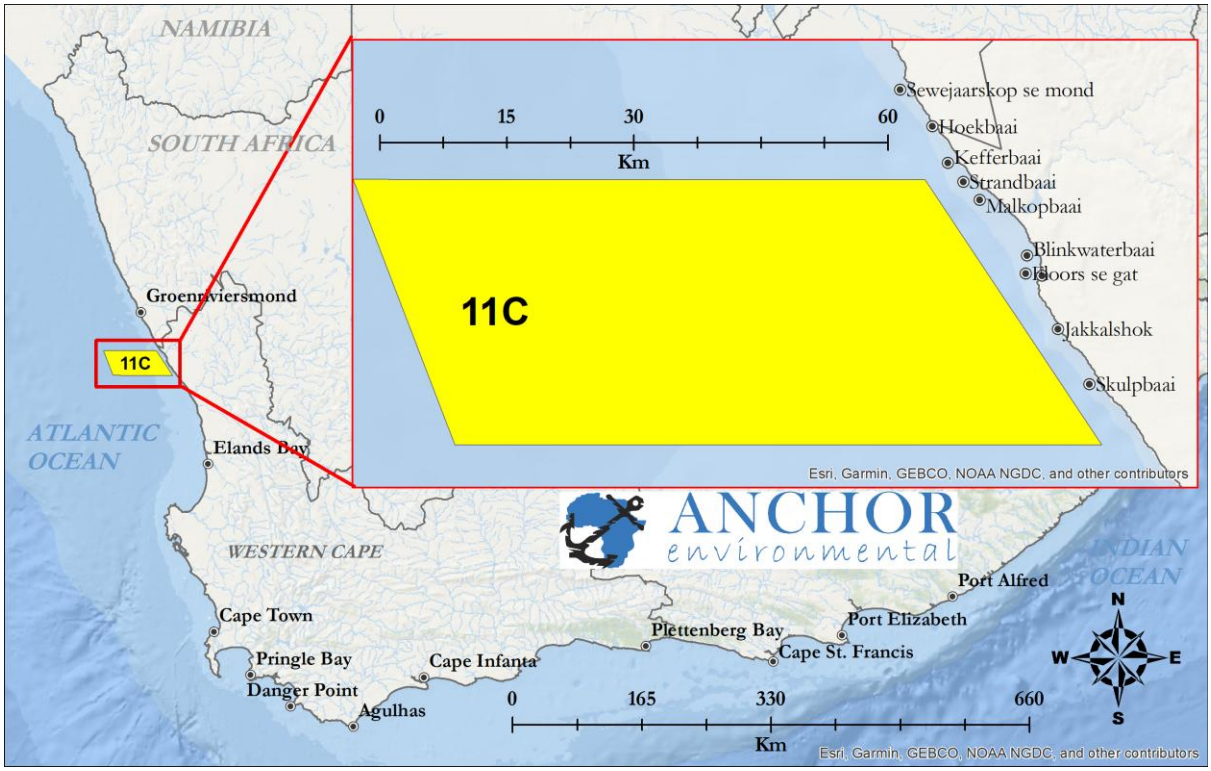

Figure 1 **The location of Concession Area 11C along the West Coast of South Africa.**

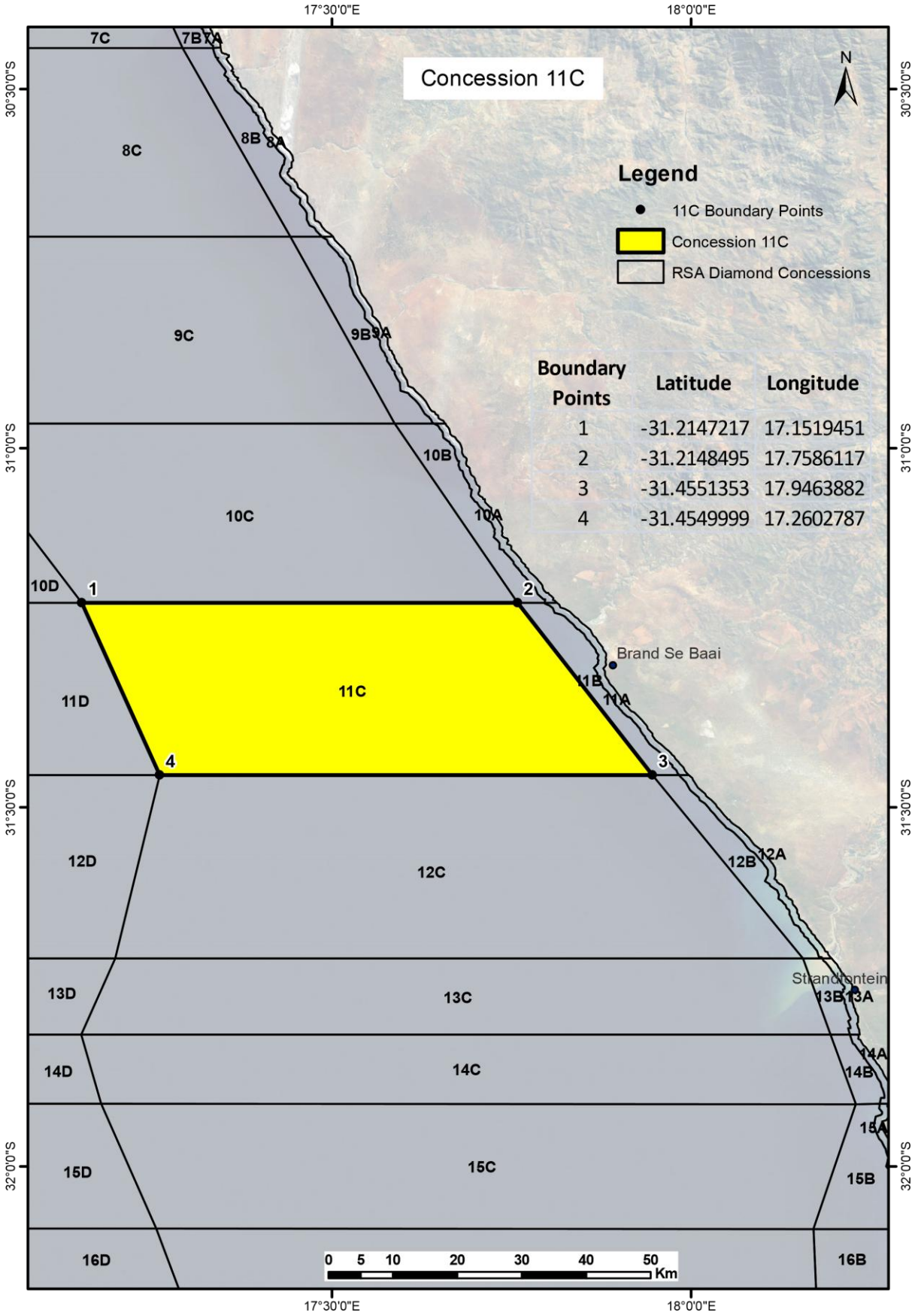

Figure 2 **Coordinates and boundaries of Concession Area 11C along the West Coast.**

4.3 Purpose of this Document

This document, if approved by the DMPR, represents the binding EMPr for the full cycle of the prospecting rights activities at the management level. The management and mitigation measures identified during the BA process apply to the following phases of prospecting:

- The Planning and Design Phase: These measures are applicable to the planning and design of the prospecting activities. Note, however, that no environmental impacts are associated with the planning phase. All mitigation measures listed in this section have the purpose to minimise impacts during the operational and decommissioning phase.
- The Operational Phase: These measures are applicable during the long-term operation of the prospecting rights activities.
- The Decommissioning Phase: These mitigation measures are applicable during the decommissioning phase and refer to a reduction in prospecting activities (>90%).

The measures listed for the various phases are either:

- **Essential:** Mitigation measures which must be implemented and are non-negotiable; or
- **Best practice:** Recommended to comply with best practice, with adoption dependent on the proponent's risk profile and commitment to adhere to best practice, and which must be shown to have been considered and sound reasons provided by the proponent if not implemented. *These measures have been italicised for ease of reference.*

Note that the EMPr is submitted to the DMPR for approval along with the BAR. If an Environmental Authorisation is issued by the DMPR, this document may need to be updated to ensure that all relevant conditions of authorisation are adequately captured. It is also recommended that the EMPr is reviewed regularly and, where necessary, amended and submitted to the DMPR for acceptance.

4.4 Description of the Aspects of the Activities.

Trans Atlantic Diamonds (Pty) Ltd is proposing to prospect within Sea Concession area 11C using both non-invasive and invasive sampling activities, none of which require infrastructure. For the purpose of this study, non-invasive means not physically destructive and invasive means physical sampling that is destructive. As the activity is located offshore and comprises prospecting only, no land-based infrastructure will be required. Prospecting will be conducted using a dedicated survey vessel. They are proposing to prospect for precious metals (gold, silver and platinum), gemstones (alluvial diamonds, sapphires and garnets), ferrous and base metals such as rare earths (monasite mineral), black sand minerals (titanium minerals e.g. ilmenite and rutile), zirconium ore (zircon) and iron ore (magnetite) within Sea Concession area 11C. The proposed prospecting programme will take place during spring and/or summer and when weather conditions are suitable, and seas are calm. It is anticipated to be completed within five (5) years. Sampling will be conducted in four phases and include a combination of non-invasive and invasive activities to detect the presence of paleo-beach deposits, which are known from other concessions to contain diamondiferous gravels. Prospecting operations are expected to occur sporadically within the concession area. The non-invasive activities

will include geophysical exploration (acoustic survey), data acquisition and analysis, while the invasive activities will include physical sampling (collection of core, drill and grab samples).

Non-invasive sampling activities will include the following:

- Desktop study;
- Geophysical survey and seafloor mapping;
- Data acquisition and synthesis;
- Geological modelling; and
- Feasibility study.

Invasive sampling activities will include:

- Van Veen grab sampling;
- Core sampling using either a Vibracore, Gravity core or Sonic core;
- Drilling with a specialised drilling tool; and
- Resource estimation

4.4.1 Phase 1

Desktop Study:

A comprehensive literature review will be undertaken to investigate the depositional environments, sediment stratigraphy and geological units of the area. Data will be obtained from a variety of sources including previous explorations in neighbouring concession areas, published papers, data from field surveys, databases, etc. This review will allow the applicant to identify target sites that are likely to contain diamonds or other valuable minerals within the concession area. It will also enable the applicant to identify potential challenges and the best means to address these challenges with a view to minimising environmental impacts and costs. This will allow for a more efficient and effective prospecting sampling programme.

Geophysical Exploration (Acoustic survey)

Geophysical surveying will be undertaken to collect high-resolution acoustic and multibeam echosounder data throughout the concession area. The purpose of the acoustic survey is to collect high-resolution acoustic and multibeam echosounder data. This activity will allow the identification and mapping of features and various rock formations and sedimentary types within the concession area. Based on the geological formation of the seafloor in concession area 11 (C), as revealed by the geophysical survey, an appropriate sampling method will be identified.

4.4.2 Phase 2:

Van Veen grab sampling

This is a popular method used to collect sediment samples for biological, environmental and geotechnical studies. It usually comprises a clamshell bucket made of stainless steel that collects sediment from the seafloor. A Van Veen grab with a sampling capacity of approximately 50 kg will be used to collect baseline environmental data on sediment and benthic macrofauna at 20-50 sites. The grab can penetrate to depths of 20 to 50 cm and collects surficial sediment samples that will be subjected to subsampling. Those for biological analyses will be stored in formalin or ethanol whereafter they will be sent for biological analysis, while the geotechnical subsamples will be frozen and sent to a laboratory to test for shear strength, grain size composition, etc. Samples for biological will be analysed to identify benthic macrofauna (small animals such as worms, mussels, and crustaceans) and to determine the geological units of the seafloor. The grab samples will disturb a

total surface area of 5 square meters (m^2) while the total volume of samples that will be collected will be 1.5 cubic meters (m^3). Results from this survey will represent baseline data against which any change in macrofaunal communities in the area can be benchmarked after prospecting and mining (should the project proceed to production).

Coring

Geotechnical samples will be collected at 100-200 sites using either vibracoring, gravity coring or sonic coring. A core is used to penetrate the seafloor to collect sediment samples. These samples are analysed to determine the sea floor geology (types of material present, i.e. sand, gravel and/ or rock and the hardness of the rock), topography (trenches or elevations) and sediment stratigraphy (how sand and rock are layered). This information is then used to engineer the drilling tool (for phase three of the prospecting activities – see below) and the future mining vessel. Geotechnical sampling is also used for resource evaluation, i.e. determining whether there are materials that can be mined in the area and whether it will be economically viable. The type of coring will depend on the geological formations of the seafloor. The diameter of core samples will be approximately 10 cm, the corers will penetrate to depths of 3–8 m. The volume per core is estimated at 0.024 m^3. It is estimated that an initial 100 core samples will be required. The exact sampling sites will be informed by the information acquired during the geophysical surveying and the recommendations from the environmental impact assessment (marine ecology specialist study). The core samples will disturb a total surface area of 1.57 m^2, while the total volume of samples that will be collected by the cores will be 4.71 m^3.

4.4.3 Phase 3

Drilling

In addition to the above, prospective targets will be analysed by a uniquely designed drill tool that can dredge gravel from the seabed. Material will be processed onboard by a processing plant and tailings will be discarded overboard, and may result in sediment plumes, in this instance as a near-shore deposit. The discard material is expected to consist mostly of sand that has a minimal suspension time. Pending the final tool design, the drill bit footprint is estimated to be between 3 and 5 m^2 diameter. The expected average hole depth will be 3 m. Sample volumes are anticipated to be in the range of 9 to 15 m^3 per sample. At an initial sample density of 0.06 samples/ha, 150 samples will be collected. Follow-up sampling will require an additional 150 samples. The total number of samples that will be required for drilling, is therefore 300 samples which will cover a surface area of 1500 m^2 (based on a drill size of 5 m^2). Should these follow-up samples indicate that there could be a potential resource, only then will resource development commence. A potential resource area of not larger than 500 m x 300 m will then require an additional 60 samples spaced on a 50 m grid. Approximately 20 resource development areas will be required. This equates to 1 200 samples covering a surface area of 6 000 m^2 (based on a drill size of 5 m^2). The total surface area that will be disturbed during Phases 1, 2, and 3 is estimated at 7 507 m^2 or 0.75 ha. This equates to 0.0005% of the total area of Concession area 11C that will be disturbed. The information acquired will be used for understanding the seafloor topography, resource evaluation and to determine if diamond or other mineral mining within concession area 11C is economically viable. Information will also be used to inform the construction of the mining vessel and to identify areas for mining.

4.4.4 Phase 4:

Feasibility study

Should Phases 1, 2 and 3 yield positive results and the targeted features be identified, a feasibility study will be conducted to assess the likely magnitude of the resource and the economic viability of mining in the proposed prospecting area.

4.5 Composite Map: Location and environmental sensitivities in Concession 11C

The following section includes maps showing the location of Concession Area 11C in relation to environmental sensitivities in the area.

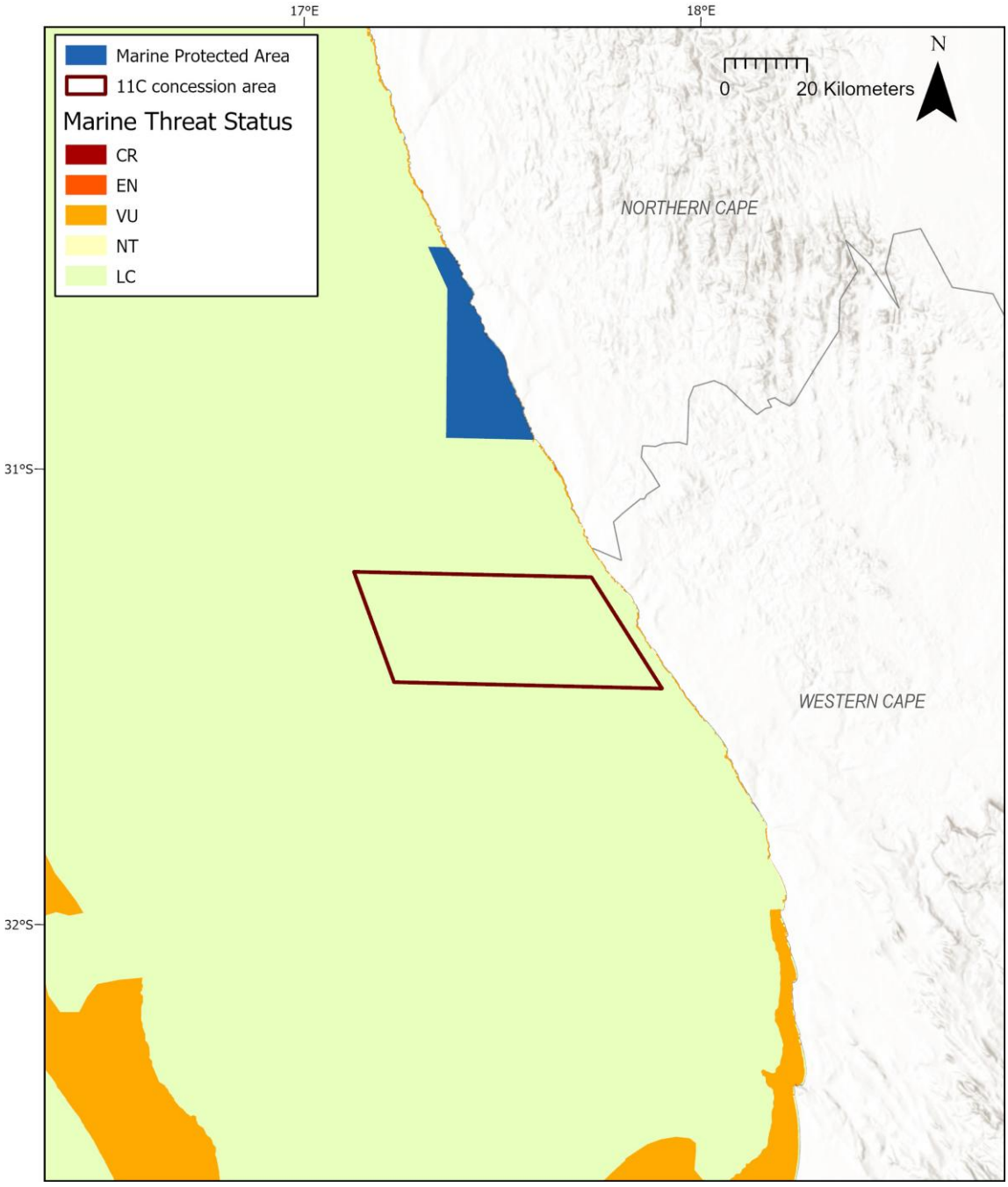

Figure 3 **Marine Ecosystem Threat Status 2023, Marine Protected Area and location of Concession Area 11C. CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern. Source: https://bgis.sanbi.org/.**

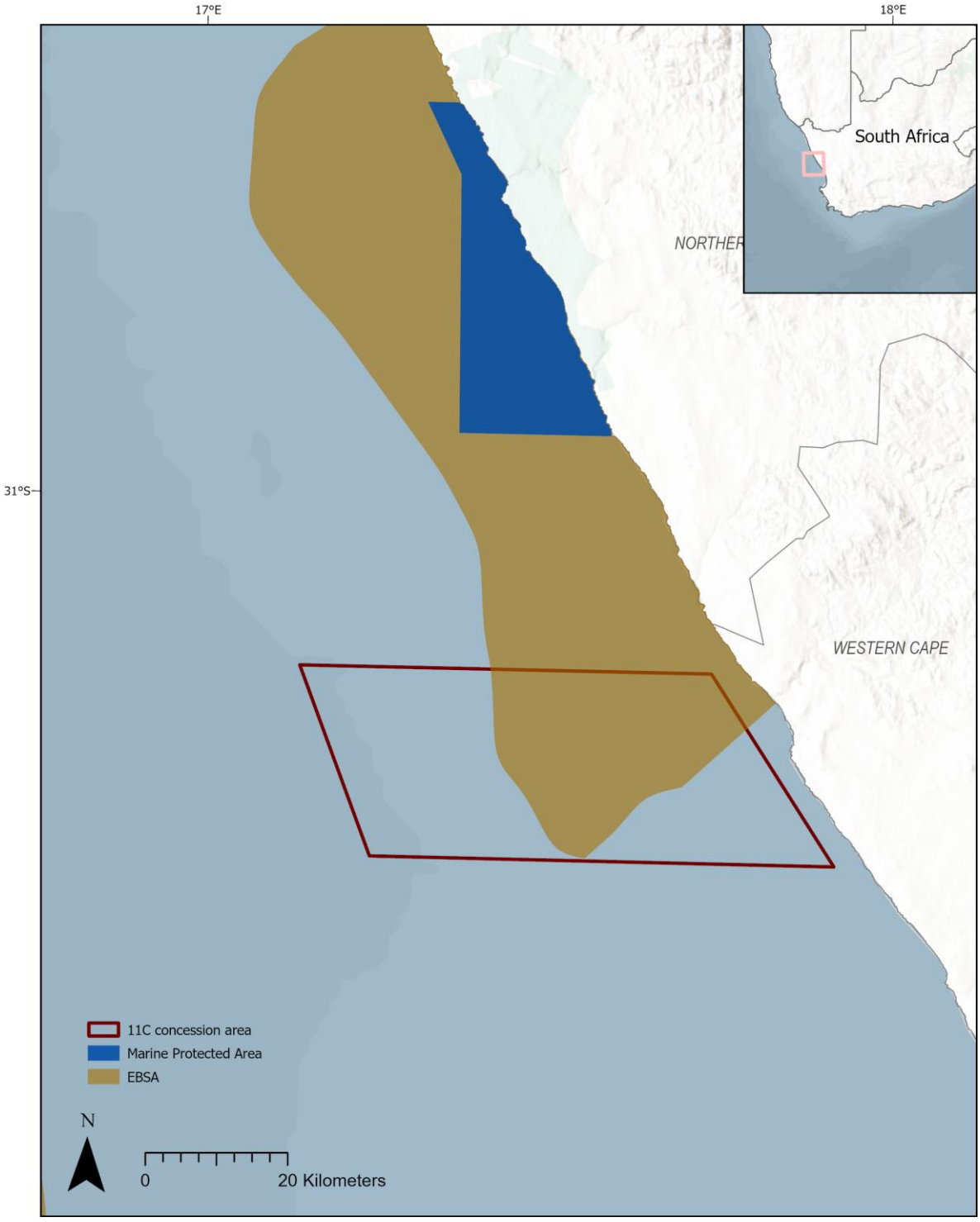

Figure 4 **Marine Protected Areas (dark blue) and the proposed Namaqua Coastal Area EBSA and location of Concession Area 11C. Source: https://bgis.sanbi.org/.**

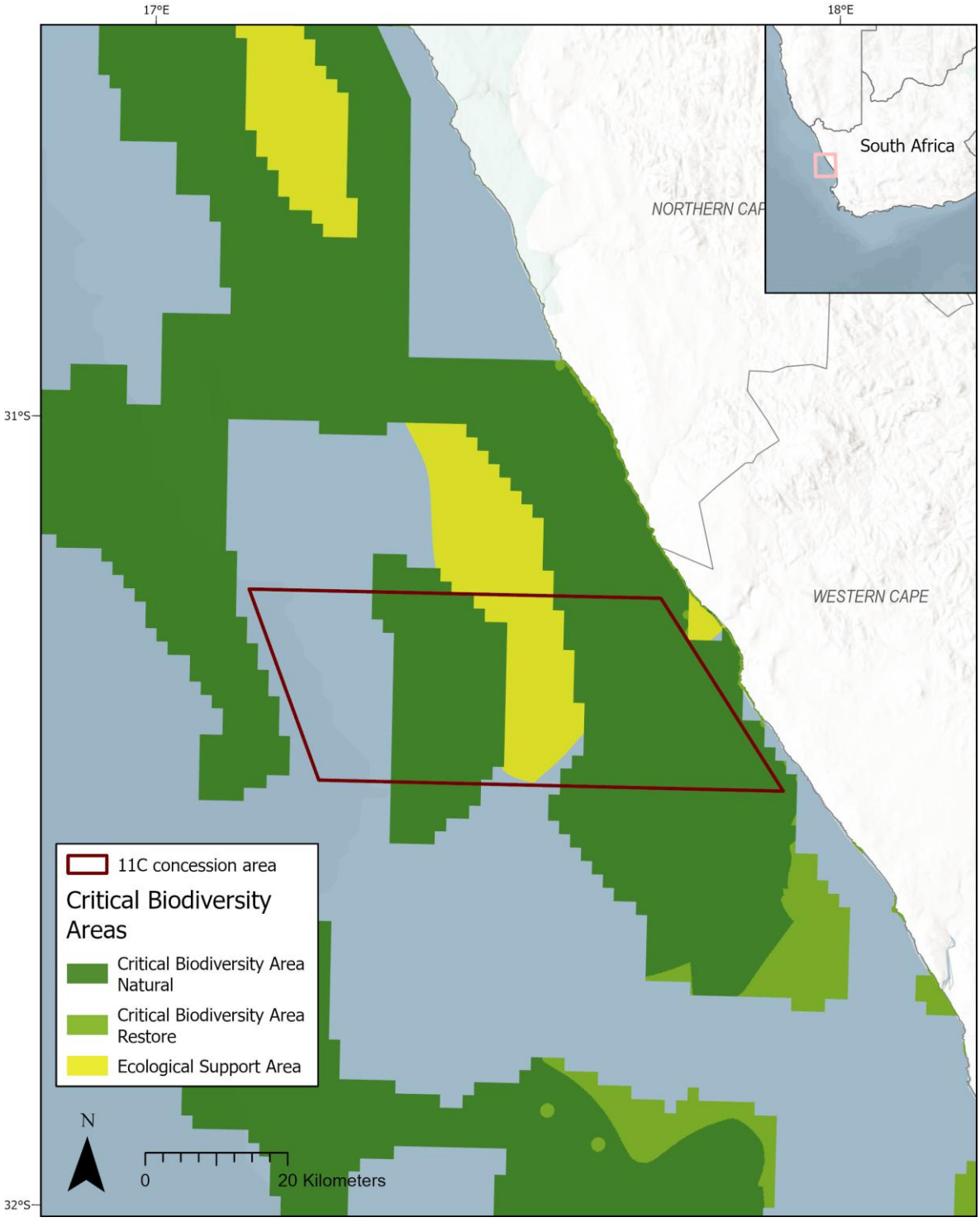

Figure 5 **Critical Biodiversity Areas within the vicinity of the 11C concession area.**

4.6 Project Phasing

4.6.1 Planning and design Phase

The planning and design phase of the development refers to the actual planning and design of the operational phase. This refers to the desktop literature study, literature review and stakeholder consultation that will inform the prospecting activities taking place within the operational phase. A comprehensive literature review will be undertaken to investigate the depositional environments, sediment stratigraphy and geological units in the area. This will include an assessment of whether diamonds and other resources are likely to occur within the prospecting area. Data will be obtained from a variety of sources including previous explorations in neighbouring concession areas, published papers, data from field surveys, databases, etc. This review will allow the applicant to identify target prospecting sites within the concession area, and help to exclude sensitive or no-go areas. It will also enable the applicant to identify potential challenges and means to address these challenges to reduce environmental impacts and costs. This will allow for a more efficient and effective prospecting sampling programme.

4.6.2 Operational Phase

The operational phase of the development will commence once a thorough due diligence has been conducted regarding the activities scheduled to take place during this phase. This refers to geophysical (acoustic) surveys, Van Veen grab sampling, coring and drilling of the seabed.

4.6.3 Decommissioning Phase

Decommissioning refers to the process of removing the operating assets of the project after completion of the operational phase and activities.

5 IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

Specialist studies were conducted where expert input was provided on the potential impacts to the marine environment and fishing industry as well as heritage and socio-economic impacts by the proposed prospecting activities. The marine specialist study is included in Appendix 5 of the Basic Assessment Report (BAR). Anchor also appointed a specialist to conduct a desktop Maritime and Underwater Cultural Heritage (MUCH) study as requested by the South African Heritage Resource Association (SAHRA). The heritage specialist study has been included as Appendix 6 of the BAR. A desktop-based socio-economic assessment was conducted and has been included as Appendix 7 to the BAR. The findings of these specialist reports and all other relevant information have been integrated into the BAR and used to inform the Environmental Management Programme (EMPr, this document).

Based on the professional experience of the environmental assessment practitioner, The National Web based Environmental Screening Tool, legal requirements, the nature of the proposed activity, and the nature of the receiving environment, the potential positive and negative impacts associated

with prospecting in Concession Area 11C were grouped and assessed based on the following major receptors: (1) Marine ecology and fisheries, (2) Heritage resources, (3) Socio-economic aspects, (4) Science, (5) Shipping, and (6) Visual integrity. The cumulative impacts were also considered.

The assessment identified 22 potential negative impacts ranging from medium significance to insignificant and three potential positive impacts ranging from low significance to insignificant. With the implementation of effective mitigation measures, the negative impacts can all be reduced to low, very low, or insignificant. The negative impacts are associated with the disturbance of fauna (invertebrates, fish, mammals, seabirds and turtles), submerged prehistoric resources, shipping activities and fishing activities. Mechanisms include disturbance by means of physical sampling activities, acoustic surveys or vessel movement. These impacts have the potential to result in the loss of environmental integrity, social values and economic opportunities. It should, however, be noted that most of these impacts were assessed to be insignificant. Marine mammals are expected to be the most significantly affected group, due to the impacts that the acoustic surveys could have on echolocation, behaviour and critical activities such as feeding. The impact of prospecting on submerged Prehistoric Heritage and Palaeontological Resources is expected to be very low and can even yield a positive outcome, provided sediment samples are retained for assessment of paleoenvironmental and prehistoric lithic material. Due to the location of the concession area relative to the nearest towns and harbours (5 km offshore in addition to 40 km and 50 km north of Strandfontein and Doringbaai, respectively), and low fishing effort in this area, prospecting activities are not expected to have a significant impact on fisheries and a negligible impact on the visual integrity of the area. Prospecting activities could also provide benefits in the form of regional socio-economic opportunities in addition to contributing towards scientific knowledge, specifically in terms of baseline environmental sediment, species and high-resolution bathymetry data. These benefits are, however, considered to be relatively low in the broader context. A summary of the potential impacts of the proposed development are presented below using the following colour scheme to indicate significance of impacts:

Negative	Positive
VERY HIGH	VERY HIGH
HIGH	HIGH
MEDIUM	MEDIUM
LOW	LOW
VERY LOW	VERY LOW
INSIGNIFICANT	INSIGNIFICANT

5.1 Planning and Design Phase

No environmental impacts are anticipated to be associated with the Planning and design phase.

5.2 Operational Phase

A summary of operational phase impacts are listed in Table 1 below.

Table 1 **Summary of potential impacts associated with the operational phase of the proposed prospecting activities before and after mitigation; where N/A refers to impacts where no mitigation is deemed necessary.**

IMPACT	SIGNIFICANCE – WITHOUT MITIGATION	SIGNIFICANCE – WITH MITIGATION
MARINE AND FISHERIES IMPACTS		
Impact 1: Seismic disturbance to plankton	**INSIGNIFICANT**	**N/A**
Impact 2: Underwater noise disturbance to invertebrates by acoustic surveys	**INSIGNIFICANT**	**N/A**
Impact 3: Underwater noise disturbance to fish by acoustic surveys	**INSIGNIFICANT**	**N/A**
Impact 4: Underwater noise disturbance to marine mammals by acoustic surveys	**MEDIUM**	**LOW**
Impact 5: Underwater noise disturbance to seabirds by acoustic surveys	**LOW**	**VERY LOW**
Impact 6: Underwater noise disturbance to turtles by acoustic surveys	**INSIGNIFICANT**	**INSIGNIFICANT**
Impact 7: Drilling noise on marine fauna.	**INSIGNIFICANT**	**INSIGNIFICANT**
Impact 8: Marine megafauna collisions with survey vessels	**VERY LOW**	**INSIGNIFICANT**
Impact 9: Offshore based seabed sampling and tailings disposal	**MEDIUM**	**LOW**
Impact 10: Fine sediment plumes	**VERY LOW**	**N/A**
Impact 11: Artificial light at night from vessels on marine fauna.	**LOW**	**VERY LOW**
Impact 12: Waste discharge during vessel operations	**VERY LOW**	**INSIGNIFICANT**
Impact 13: Impact on Fisheries	**INSIGNIFICANT**	**N/A**
HERITAGE RESOURCES IMPACTS		
Impact 14: Impacts on Submerged Prehistoric Heritage Resources: Core/drill/ grab sampling	**VERY LOW**	**VERY LOW** (positive)
Impact 15: Impacts on Maritime Archaeological Resources: Core/drill/ grab sampling	**N/A**	**N/A**
Impact 16: Impacts on Paleontological Resources: Core/drill/ grab sampling	**VERY LOW**	**VERY LOW** (positive)

IMPACT	SIGNIFICANCE – WITHOUT MITIGATION	SIGNIFICANCE – WITH MITIGATION
SOCIO-ECONOMIC IMPACTS		
Impact 17: Tuna pole and line	**INSIGNIFICANT**	**N/A**
Impact 18: Traditional linefish Sector	**INSIGNIFICANT**	**N/A**
Impact 19: Small pelagic purse seine fisheries	**VERY LOW**	**INSIGNIFICANT**
Impact 20: Kelp harvesting	**INSIGNIFICANT**	**N/A**
Impact 21: Local socio-economic performance	**INSIGNIFICANT** (positive)	**N/A**
Impact 22: Regional socio-economic performance	**LOW** (positive)	**N/A**
IMPACTS ON SCIENCE		
Impact 23: Impact on Science	**LOW** (positive)	**N/A**
IMPACTS ON REGIONAL SHIPPING TRAFFIC		
Impact 24: Impacts on other vessels	**INSIGNIFICANT**	**N/A**
IMPACTS ON THE VISUAL INTEGRITY OF THE AREA		
Impact 25: Visual	**INSIGNIFICANT**	**N/A**
CUMULATIVE IMPACTS		
Cumulative negative impacts “worst case” scenario	**HIGH**	**MEDIUM**
Cumulative positive impacts “worst case” scenario	**VERY LOW** (positive)	**N/A**

Below follows a more detailed summary of the potential impacts identified and assessed according to each major receptor.

5.2.1 Marine ecology and fisheries

Thirteen potential negative impacts on the Marine environment and fisheries, ranging from medium to insignificant, were identified. With effective mitigation these can all be reduced to low, very low, or insignificant. These impacts include seismic (acoustic) disturbance to marine fauna; survey vessel collision with marine megafauna; impacts of drilling noise on marine fauna; direct impact of seabed excavation and tailings disposal on pelagic (open water) and benthic habitats (soft sediment and reef associated communities); impact of fine sediment plumes on surrounding benthic and pelagic habitat;

waste discharges during vessel operations; and impacts on fisheries and the livelihoods of fishing communities due to exclusion from fishing grounds and disturbance of target fish species. The potential impact of most concern is that of seismic disturbance to marine mammals and was assessed as MEDIUM negative significance prior to mitigation. It is known that migrating humpback, southern right whales, dusky dolphins and the near threatened Heaviside's dolphin are frequently encountered on the west coast of southern Africa. Of the proposed seismic survey activities, the Topas sub-bottom profiler system could present a risk to dusky and Heaviside's dolphins. Effective implementation of mitigation measures should ensure that potential impacts on marine mammals arising from the proposed seismic survey activities in concession 11C would be reduced to LOW significance.

The proposed sampling via coring and drilling is not expected to create significant underwater noise as the sound is largely restricted to the seabed material (sand/rock) and environmentally significant sound propagation in the water column is not anticipated. Seabird collision with the vessel is not anticipated as the vessel will not be creating fish offal to attract sea birds and is not expected to create light that will be brighter or more intense than that on any other operational vessel.

The limited spatial scale, temporary nature of operations (intermittently over the next five years, with only a few months of total operations and a shorter active survey period) and low volume of any sediment plumes generated during sampling are not anticipated to have noticeable impacts on small pelagic fish recruitment. It is worth noting that much of the west coast constitutes a recruitment area for anchovies and only a tiny proportion may be impacted by the generation of turbidity plumes for a very short duration.

5.2.2 Heritage

Prospecting activities may have an impact on any submerged Prehistoric Heritage, Marine Archaeological and Palaeontological Resources present within Concession area 11C. The significance of prospecting-related impacts on such material was assessed to be VERY LOW for Prehistoric Heritage and Palaeontological Resources, while impacts on the Marine Archaeological Resources were assessed to be unlikely and thus scoped out of the assessment. This is due to the fact that there is little or no potential for the presence of historical shipwrecks in the concession area. There is potential for the status of the potential impacts to be changed from negative to positive if core samples are retained for assessment of paleoenvironmental and prehistoric lithic material.

5.2.3 Socio-economic

Prospecting activities are anticipated to potentially, negatively impact several fishery sectors that operate in the area. These include the tuna pole and line, traditional line fish, and Small Pelagic Purse Seine commercial fishing sectors. These impacts are related to the 1) temporary disturbance of marine resources; 2) exclusion of fishing vessels from the concession area 11C; and 3) the degradation of water quality. The impacts of the former two were, however, assessed to be insignificant with no mitigation measures being required. Impacts associated with the latter (degradation of water quality) was assessed to be of very low significance and is expected to be reduced to insignificant after the implementation of appropriate mitigation measures. Due to the remote and offshore location of the 11 C concession, however, local small scale and subsistence fishing communities are not expected to be negatively impacted. Despite this very low impact rating, the poor economic performance of the coastal communities should still be taken into consideration due to their high dependence on marine

resources to support their household income and livelihoods. Potential positive impacts from the prospecting activities include the generation of local and regional economic opportunities, although the benefits of these are expected to be insignificant and low, respectively.

5.2.4 Contribution to Science

Soil and biological samples will be collected during the prospecting activities using a clamshell bucket instrument called a Van Veen Grab. These samples will then be sent to an independent environmental laboratory for analysis to establish a baseline of environmental data. This includes analysing sediment composition and determining the composition and abundance of benthic species in the sediment. Data collected during the acoustic survey could further be used to identify important physical features such as reefs that may be present in the area. Should artefacts, fossils or any other heritage resources be discovered during the prospecting, these will be donated to scientific institutions and can therefore make an important contribution to the palaeontological knowledge and potential of the continental shelf. The information collected during the prospecting survey could therefore contribute towards scientific and environmental knowledge and information.

5.2.5 Shipping

The majority of shipping traffic is located on the outer edge of the continental shelf, which is well offshore of the outer edge of Concession Area 11C. The impacts of prospecting activities within concession area 11C on shipping activities are therefore considered to be insignificant.

5.2.6 Impact on visual integrity of the area

Concession Area 11C is located approximately 5 km offshore and 30–40 km north of the nearest coastal town, namely Strandfontein, and approximately 20 km north-west and 5 km offshore of the nearest inland towns, namely Lepelsfontein and Kotzesrus. The concession area is relatively remote, and temporary survey activities are expected to be largely inconspicuous. It is unlikely that the survey vessel will be visible from these towns or from the shoreline. The vessel is also not expected to be more conspicuous than other vessels that may operate in the area, such as fishing vessels. The survey phase is expected to occur intermittently over the next five years, with the total operational window extending over only a few months and the active survey period being shorter than this. Accordingly, the presence of the vessel and associated activities within Concession Area 11C is expected to have a negligible impact on the visual integrity of the area.

5.2.7 Cumulative impacts

Due to the extent of marine mining and prospecting along the South African west coast, cumulative impacts (whether positive or negative) are experienced across the regional spatial scale and are of longer duration (medium–long term). This results in an increase, by one level, in the overall significance of most impacts assessed when considered cumulatively (i.e., “medium” becomes “high”). For the purpose of assessing cumulative impacts of prospecting within Concession area 11C, a precautionary approach was taken and an assessment of a “worst case” scenario was done for both negative and positive impacts. Therefore, we assessed the negative impact that was found to be of highest significance, i.e., the MEDIUM Significance impact of seismic surveys on marine mammals and the positive impact that was found to be of lowest significance, i.e., the INSIGNIFICANT socio-economic benefit of prospecting on the local communities of the area. The assessment of the negative

cumulative impacts of marine prospecting along the west coast that were assessed as "Medium" significance would be assessed as being of "High" negative significance when considering the impact in conjunction with other projects and their impacts. The assessment of the positive cumulative impacts of marine that was assessed as being "INSIGNIFICANT", would be assessed as being of "VERY LOW" positive significance when considering it in conjunction with other projects and their impacts. Mitigation measures as recommended for each individual impact should be implemented. An additional recommended mitigation is that an updated Strategic Environmental Impact Assessment be commissioned and undertaken to assess cumulative impacts of marine prospecting along the South African west coast with a "medium" to "high" level of confidence, and to identify and implement regional mitigation measures.

5.3 Decommissioning Phase

The decommissioning phase is not associated with any environmental impacts.

6 ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME IMPLEMENTATION

FUNCTION	ROLE
Project Manager/ Applicant	**Role** The Project Manager is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). An independent environmental control officer (ECO) must be contracted by the Project Manager to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of environmental authorization (EA). The Project Manager is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. **Responsibilities** • Be fully aware of the conditions of the EA; • Overall management of the project and EMPr implementation; • Ensure that all stipulations within the EMPr are communicated and adhered to by the Applicant, Sampling Contractor(s) and any crew on board the vessel; • Monitor the implementation of the EMPr throughout the project; • Ensure that periodic environmental performance audits are undertaken on the project implementation; and • Provide updated information to the public.
Scientific Officer (Internal monitoring)	**Role** The Scientific Officer reports directly to the Project Manager, oversees site works, liaises with the contractor(s) and the ECO. The Scientific Officer is responsible for the day to day implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and for ensuring the compliance of all contractors with the conditions and requirements stipulated **Responsibilities** • Oversees site works, liaison with Contractor, Project Manager and ECO; • Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Reporting the EMPr. • Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; • Conduct environmental awareness training on site together with ECO and contractors; • Ensure that the necessary legal permits and / or licenses are in place and up to date • Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) and its sub-contractor(s); • Conduct environmental internal audits with regards to EMPr. • Assist the contractors in addressing environmental challenges • Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared;

FUNCTION	ROLE
	• Assist the contractor in investigating environmental incidents and compile investigation reports; • Monitor the implementation of the EMPr throughout the project by means of weekly checklists and regular meetings;
Environmental Control Officer (ECO) (External or Independent monitoring)	**Role** The ECO should be employed by the applicant/ project manager for the duration of the project. The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller that monitors all environmental concerns and associated environmental impacts. The ECO conducts site inspections, manages problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the Scientific Officer. The ECO provides feedback to the Scientific Officer and Project Manager regarding all environmental matters. All role players answer to the Environmental Control Officer for non- compliance. The ECO must also report to the relevant CA as and when required. **Responsibilities** • Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; • Undertake regular site inspections / audits of the activities according to the EMPr, including any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; • Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; • Liaison between the Project manager, Scientific Officer, Contractors, authorities and other stakeholders; • Issuing of site instructions to the Contractor for corrective actions required; • Reviewing all documents submitted by the Scientific Officer (method statements, incident reports, complaints register, etc.) • Facilitate environmental awareness training; • In case of non-compliances, the ECO must first communicate this to the Scientific Officer, who must address this matter. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; • Maintenance, update and review of the EMPr; • Communication of all modifications to the EMPr to the relevant stakeholders.
Sampling Contractor/ Employees on vessel	**Role** The contractors are required to provide Method Statements detailing the equipment, materials, labour and method(s) that will be used by them to conducting the sampling/ work and also setting out in detail how the management actions contained in the EMPr will be implemented during activities. The Contractor has overall responsibility for ensuring that all work, activities, are in line with the Environmental Management Programme and that Method Statements are implemented as described. All instructions relating to the EMPr will be given to contractors via the scientific officer. Contractors will report issues of concern to the scientific officer, who in turn will report on progress to the TAD.

FUNCTION	ROLE
	Contractors include the captain on the vessel, the crew handling the equipment and doing sampling, geologist, etc. **Responsibilities** • Preparing method statements of work that will be done; • Conducting the sampling activities as per the method statements and EMPr; • Ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly; operated and maintained, to facilitate proper access and enable any operation to be carried out safely; and • Attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones.
Fisheries Liaison Officer (FLO)	**Role** A fisheries liaison officer (FLO) should be appointed to facilitate communication with affected fishing sectors. The FLO should report daily on vessel activity and respond and advise on action to be taken in the event of encountering fishing gear in the survey area. **Responsibilities** • Liaison between fishing sectors and Project Manager and Scientific Officer
Marine Mammal Observer (MMSO)	**Role** A designated onboard Marine Mammal and Seabird Observer (MMSO) keeps watch for marine megafauna in the path of the vessel during all vessel activity, including the geophysical surveying. Marine megafauna will include, but are not limited to, all marine mammals (whales, cetaceans, seals, etc.), sea turtles, fish and seabirds. They are also in charge of managing the passive acoustic monitoring (PAM) system during the survey activity to detect marine mammals that could be at risk. **Responsibilities** • Keeps watch for marine megafauna to prevent collision and impact due to acoustic survey. • Records all sightings and incidents with marine megafauna and fish, including behaviour.
Passive Acoustic Monitoring (PAM) Observer	**Role** A designated onboard Passive Acoustic Monitoring (PAM) Observer uses passive acoustic hydrophones to detect the vocalisations of marine species. This person can also be a MMSO, but must not be the designated MMSO. **Responsibilities** • Managing the PAM system • Listens out for underwater marine megafauna to prevent collision and impact due to acoustic survey.

7 DOCUMENTATION, REPORTING AND COMPLIANCE

The completed EMPr must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the EMPr. Each method statement must be signed and dated on each page by the holder of the EA. This EMPr, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation. Once completed and signed, the Applicant must make this EMPr available to the public in accordance with regulation 26 (h) of the Environmental Impact Assessment Regulations, 2014.

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for this prospecting activity, as a minimum requirement. These are listed/described below.

7.1 Document control/Filing system

The holder of the EA is responsible for the management of the EMPr file in which all documentation detailed below must be filed. An electronic copy must also be kept as back-up. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

7.2 Documentation to be available

The following documents must be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the Competent Authority in terms of NEMA, granting approval for the development or expansion;
- Copy of the EMPr as well as any amendments thereof;
- A map of the Concession area indicating proposed sampling sites within the concession area, sensitive habitats and reefs and buffers.
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off.
- Complaints register.

7.2.1 Weekly Environmental Checklist

The Scientific Officer is required to complete a Weekly Environmental Checklist, to ensure conditions, as set out in the EMPr, are implemented and adhered to. Checklists must be dated and signed and a copy submitted to the Environmental Control Officer on a weekly basis. The checklists will form the basis for the Monthly Environmental Reports and be attached to the Environmental Audit Report as required in terms of the EIA regulations, 2014.

7.2.2 Required Method Statements

Method Statement means a written statement detailing the equipment, materials, labour and method(s) that will be used by the Contractors conducting the sampling/ work and also setting out in detail how the management actions contained in the EMPr will be implemented during activities. A statement should be prepared for each phase of the prospecting activities (e.g. acoustic survey, grab sampling, core sampling, drill sampling, tailings disposal, resource development, or any other activity that could result in environmental impacts). These should be prepared in consideration of the mitigation measures. These method statements should be submitted and reviewed by the Project Manager, Scientific Officer and Environmental Control Officer. The Environmental Control Officer and Scientific officer shall ensure that the contractors perform in accordance with these method statements. They are not required to be submitted to the CA. These statements must be prepared in such detail that the Project Manager, Scientific Officer and Environmental Control Officer are able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification. Method statements are to be prepared by the contractor prior to commencement of the activity.

The Method Statement must cover applicable details with regard to:

- Prospecting procedures;
- Materials and equipment to be used;
- How and where samples/ material/ equipment will be stored;
- Waste management system that will be implemented;
- Timing and location of activities;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Compliance/ non-compliance; and
- Any other information deemed necessary by the Project Manager/ Scientific Officer or Environmental Control Officer.
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

7.2.3 Environmental Incident Log

The Scientific Officer is required to maintain an up-to-date and current Environmental Incident Log to record all environmental incidents and/or all non-compliance notices. These must be reported to the Project Manager and ECO. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr)
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr (e.g. injury to marine megafauna or accidental spill)

It includes, amongst other, the following information:

- The date, time and description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log; and
- Remedial or corrective action taken to mitigate the incident.

7.2.4 Non-compliance

Non-compliance means the contractor/ applicant deviated from the environmental conditions, management outcomes and actions activities. A non-compliance notice will be issued in writing to the responsible contractor by the Scientific Officer. For each non-compliance notice issued, a documented corrective action must be recorded. The contractors must take action to correct the matter within the stipulated timeframe. Any non-compliance with the agreed procedures of the EMPr is a transgression of the law. Failure to comply shall be reported to the relevant CA.

Note that any cost incurred by a Government Department or Municipality due to non-compliance to any relevant environmental legislation by the applicant, will be charged to the developer/ applicant.

7.2.5 Corrective action records

Corrective action is a critical component of the implementation–review–corrective action–implementation cycle and it is through corrective action that continued improvement can be achieved. Where repeated non-compliance is recorded, procedures may need to be altered accordingly to avoid the need for repeated corrective action.

If environmental compliance monitoring indicates non-conformance with the EMPr, The Project Manager will formally notify the operator through a Corrective Action Request. The Corrective Action Request documents:

- The nature of the non-conformance / environmental damage;
- The actions or outcomes required to correct the situation; and
- The date by which each corrective or preventive action must be completed.

For each non-compliance notice issued, a documented corrective action must be recorded. The contractors must take action to correct the matter within the stipulated timeframe. On completion of the corrective action the Scientific Officer must issue a Corrective Action Report to the ECO. Upon receipt of the Corrective Action Request, the operator will be required to report in the annual audit as to how the required actions were implemented and the success or failure of the corrective action.

Should proposed standards or targets be regularly exceeded, an independent committee or service provider should investigate and objectively assess the effectiveness of mitigation measures. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and this has to be included with the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECO.

7.2.6 Photographic record

A digital photographic record must be kept if possible. The photographic record will be used to show the progress of the work.

7.2.7 Complaints register

The ECO shall keep a complaints register to record of all complaints received from communities, stakeholders and individuals. The Complaints Register must:

- Record the name and contact details of the complainant;
- Record the time and date of the complaint;
- Contain a detailed description of the complaint;
- Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
- Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party.

7.2.8 Claims for damages

In the unlikely event that a Claim for Damages is submitted by a community, landowner or individual, this must be submitted to the ECO who must record the full detail of the complaint. The ECOs will evaluate the claim and associated damage and submit the evaluation to the Project Manager / Trans Atlantic Diamonds for consideration. Following consideration by the Project Manager, the DMPR and other relevant authorities will be contacted to determine the course of action.

7.2.9 Interactions with affected parties

Consultation with stakeholders should continue throughout the project to ensure successful management and mitigation of environmental impacts.

7.2.10 Environmental audits

In accordance with Section 34 of the EIA Regulations, 2014 (as amended in 2017), compliance with the conditions of the EA and the EMPr must be audited at intervals indicated in the EA and an audit report

must submitted to the DMPR. This should alternate between an internal auditor (Scientific officer) and an independent Environmental Control Officer (ECO). Environmental audit reports must comply with the specifications in Section 34 and Appendix 7 of the EIA Regulations, 2014 (as amended in 2017). Audits should also consider the overall progress and achievement of the objectives and milestones related to the specified targets of employment, enterprise development, preferential procurement and socio-economic development.

7.2.10.1 Internal environmental audits

Internal Environmental Audits of the activity and implementation of the EMPr will be undertaken by the Scientific Officer. The findings and outcomes of these audits will be recorded in the EMPr file. The environmental audits and associated reports must be conducted and submitted to the ECO and CA at intervals as indicated in the EA. The Scientific Officer must prepare a monthly Environmental Auditing Report. As a minimum the Monthly report should include:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Environmental Site Meetings.

7.2.10.2 External Environmental audits

An external audit should be conducted by the ECO at intervals indicated in the EA. The report is to be submitted to the CA for acceptance and approval. On final completion of the entire activity, the ECO must do a final external environmental audit and prepare a final Environmental Auditing Report. The report is to be submitted to the CA for acceptance and approval. The environmental report must comply with Appendix 7 of the EIA Regulations, 2014.

- Details of the independent person who prepared the report;
- Details of the expertise of independent person that compiled the report;
- A declaration that the independent auditor is independent in a form as may be specified by the CA;
- An indication of the scope of, and the purpose for which, the environmental audit report was prepared;
- A description of the methodology adopted in preparing the environmental audit report;
- An indication of the ability of the EMPr, and where applicable, the closure plan to-
    - Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis;
    - Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and
    - Ensure compliance with the provisions of EA, EMPr, and where applicable, the closure plan;

- A description of any assumptions made, and any uncertainties or gaps in knowledge;
- A description of any consultation process that was undertaken during the course of carrying out the EAR;
- A summary and copies of any comments that were received during any consultation process; and
- Any other information requested by the CA.

7.2.10.3 Amendments of the impact management outcomes and actions

Once the activity has commenced, the holder of an EA may make amendments to the impact management outcomes and actions in the following manner:

- Amendment of the impact management outcomes – in line with regulation 37 of the EIA Regulation, 2014
- Amendment of the impact management actions – in line with regulation 36 of the EIA Regulations, 2014

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions not included in the EMPr to manage impacts, the EMPr must be updated to include those impact management outcomes and actions. The amended EMPr must be submitted to the CA for approval prior to commencement of the activity.

8 IMPACT MANAGEMENT OBJECTIVES, OUTCOMES AND ACTIONS

Key Management Outcomes and Actions are presented in this section and includes recommendations for mitigation measures that must be implemented should the environmental authorisation for the proposed prospecting activities be granted. The applicant is reminded of the "duty of care" prescribed in section 28 of the NEMA, 1998 which states that "Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment".

It is the applicant's duty to ensure that the EMPr and associated mitigation measures are implemented and that all relevant laws, legislation, regulations, guidelines and plans (see Table 2) are adhered to. This list is not complete and should be updated regularly. All phases of the proposed prospecting project must comply with the Environmental Management Programme. The applicant should appoint the appropriate individuals to implement the EMPr and adhere to relevant legislation.

The nature, intensity and extent of any potential impacts that have been identified, including those issues identified by I&APs during the consultation process, have been carefully assessed and incorporated into the BAR and specifically into the EMPr. This information was used to inform management actions (an impact management plan) that will form part of the EMPr. The objectives of the impact management plan are to anticipate and avoid risks and impacts. Each prospecting activity has been considered, together with its potential impacts on the environment, fisheries, socio-economic, heritage and other resources. Through the development of the EMPr, measures have been developed to avoid environmental, social and other risks and impacts, and to provide mitigation where possible. This will then be included in the impact management plan to be retained by the Environmental Control Officer (or such designated authority) who can oversee and report on the impact monitoring and mitigation measures.

The mitigation Hierarchy in terms of the Department of Environmental Affairs and Development Planning guideline should be followed and includes:

- In order of priority aim to avoid, minimise, or remedy disturbance of ecosystems and loss of biodiversity;
- Avoid degradation of the environment;
- Avoid jeopardizing ecosystem integrity;
- Pursue the best practicable environmental option by means of integrated environmental management;
- Protect the environment as the people's common heritage;
- Control and minimise environmental damage; and
- Pay specific attention to management and planning procedures pertaining to sensitive, vulnerable, highly dynamic, or stressed ecosystems.

Table 2 The most important legislation applicable to prospecting in Concession area 11C.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
INTERNATIONAL AGREEMENTS AND OBLIGATIONS		
International Regulations for Preventing Collisions at Sea (Colregs 1972) These regulations refer to navigational rules that need to be adhered to by maritime vessels to minimise the likelihood of collisions.	Operation Phase	To prevent collision with other maritime vessels during survey operations, the operation vessel should adhered to this regulation, implement a safety zone and effectively signal this to other vessels.
National Legislation		
Constitution of South Africa This is the supreme law that provides the legal framework for the existence of the Republic of South Africa.	Throughout the entire prospecting process	The conducting of prospecting activities in the area shall be done in such a manner that avoids significant environmental impacts. In instances where this cannot be avoided, impacts must be minimised or mitigated in order to protect the environmental rights of South Africans.
National Environmental Management Act, 1998. NEMA sets out a number of governing environmental principles that should be taken into account and applied by all organs of state when making decisions that significantly affect the environment. It provides the minimum requirements for the procedures for investigating, assessing and communicating the potential impacts of activities on the environment and society and for the granting of Environmental Authorisation for any activity. It requires that any activity should not only be environmentally sustainable, but economically and socially as well. The cultural, social, economical, psychological, developmental and physical needs of people should be considered along with the environment.	Throughout the entire prospecting process	A Basic Assessment Process will be conducted and the appropriate environmental authorisation obtained before commencing with any activities. Measures will be taken to ensure that the activity preserves and promotes the environmental and socioeconomic integrity of the area. Interested and Affected Parties (I&APs) will be consulted and informed about the proposed activities and their potential impacts (both positive and negative). Comments received from I&APs will be communicated to the authorities for consideration as part of the Basic Assessment Report.
Mineral and Petroleum Resources Development Act, 2002. In terms of this Act, a Prospecting Right must be obtained before any prospecting activities may commence	Throughout the entire prospecting process	The applicant must submit a prospecting right application in terms of Section 16 (1) of this Act, along with an application for Environmental Authorisation (EA) to the Regional Manager.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
National Environmental Management: Protected Areas Act Provides for the formal declaration and management of protected areas to conserve biodiversity, protect natural and cultural resources, and maintain ecological integrity. It requires management plans to guide conservation and land-use decisions.	During coring, drilling and grab sampling	Prospecting activities in Concession Area 11C must ensure that operations do not contravene the provisions or management objectives of any nearby declared protected areas, and the proponent must confirm that activities occur outside protected area boundaries and comply with any applicable restrictions or management measures established under the Act.
National Environmental Management: Biodiversity Act 10 of 2004. Governs biodiversity management and the protection of threatened species and ecosystems through regulations and permits. It gives effect to international agreements, supports planning tools and regulates alien and invasive species.	Throughout the entire prospecting process	Prospecting activities in Concession Area 11C must avoid impacts on threatened species and ecosystems and comply with applicable biodiversity management measures under the Act. Activities should also take into account biodiversity planning tools, including Critical Biodiversity Areas (CBAs), and align with their management objectives where relevant. Strict compliance with the EMPr should be adhered to and mitigation measures implemented to reduce disturbance of biodiversity and aid in recovery.
National Biodiversity Framework A national-level strategic policy document that provides a coordinated framework to guide the management, conservation, and sustainable use of South Africa's biodiversity.	Throughout the entire prospecting process	Guides the prospector to consider biodiversity priorities and avoid sensitive habitats when planning and conducting prospecting activities in the offshore environment.
Animals Protection Act (Act 71 of 1962) Consolidates and amends laws relating to the prevention of cruelty to animals.	Operation Phase / During coring, drilling and grab sampling	Ensures that all operations avoid unnecessary harm or distress to marine animals encountered during survey activities.
National Environmental Management: Air quality Act, 2004. The offshore area of activity and the South African Exclusive Economic Zone (EEZ) does not fall within any municipal or provincial jurisdiction. There is thus a no formal means by which an application can be made for incineration from vessels in the offshore area. This activity is, however, permitted in terms of the International Convention for the prevention of pollution from ships, 1973/1978 (MARPOL) to which South Africa is a signatory.	Throughout the entire prospecting process	South Africa is a signatory of the International Convention for the prevention of pollution from ships, 1973/1978 (MARPOL). As such, all vessels have the responsibility to ensure that they prevent, minimise and mitigate potential pollution by vessels. To manage the potential impact of air pollution by vessels, all contractors and employees will be subjected to an environmental awareness campaign.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
Marine Pollution Act (Prevention of Pollution from Ships; Act 2 of 1986) Provides for the protection of the sea from pollution by oil and other harmful substances discharged from ships.	Operation Phase	Requires that all vessels and equipment prevent oil or pollutant discharges, with appropriate spill response measures in place during offshore operations.
Convention for the prevention of pollution from ships, 1973/1978 (MARPOL).	Throughout the entire prospecting process	Convention for the prevention of pollution from ships, 1973/1978 (MARPOL). As such, all vessels have the responsibility to ensure that they prevent, minimise and mitigate potential pollution by vessels. While a waste management license is not required for offshore waste management activities, such as those related to sewage, the generation of potential waste will be minimised through ensuring employees are subjected to the appropriate environmental awareness campaigns before commencement. All waste generated will be disposed of in a responsible and legal manner.
The Marine Living Resources Act (Act 18 of 1998) Provides for sustainable management of marine living resources, protection of marine ecosystems and biodiversity, the declaration of Marine Protect Areas with activity restrictions, and regulation of commercial, subsistence, and recreational fishing.	Planning and Design Phase / Operation Phase	Requires the prospector to avoid over-exploitation or disturbance of marine species, comply with fishing restrictions, and conduct activities without harming protected ecosystems.
Sea Birds And Seals Protection Act (Act 46 of 1973) Prohibits the harassment, disturbance, killing, or capture of seabirds and seals.	Operation Phase	Prohibits disturbance of seabirds and seals during survey operations, necessitating mitigation measures such as exclusion zones and careful vessel maneuvering.
National Environmental Management: Waste Act, 2008. Provides the framework for sustainable waste management through reduction, recycling, safe disposal, licensing of waste activities, hazardous waste control, and contaminated land remediation.	Throughout the entire prospecting process	Waste generated during prospecting operations in Concession Area 11C must be managed in accordance with the Act, including the safe storage, handling, and disposal of general and hazardous waste from vessels, and ensuring that no waste is discharged into the marine environment.
Hazardous Substances Act (Act 15 of 1973) Provides for the classification, control, and regulation of hazardous substances and products that may pose risks to human health or safety.	Planning and Design Phase / Operation Phase	Ensures safe storage, handling, and disposal of hazardous substances used in coring, drilling, or other sampling activities to prevent environmental or health risks.
Marine Spatial Planning Act of 2019	Planning and Design Phase	When planning the prospecting survey, areas of biological significance need to be taken into account and avoided.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
Makes provision for marine spatial planning system in South Africa so that the environment can be accessed by all users of the ocean, to facilitate responsible use of the ocean and conservation for future generations.		
Maritime Zones Act (No 15 of 1994) The Act defines the maritime zones of South Africa which include the contiguous zone, territorial waters, the maritime cultural zone, the exclusive economic zone and the continental shelf. South Africa has the right to exercise and implement all laws within the contiguous zone.	Throughout the entire prospecting process	Concession Area 11C lies within the territorial waters. Any offshore are subject to National law and should be adhered to.
National Heritage Resources Act, 25 of 1999. Sets the framework for protecting and managing heritage resources, which includes cultural, archaeological (including shipwrecks), and palaeontological resources.	During coring, drilling and grab sampling	A heritage impact assessment has been conducted to ensure that there are no substantial impacts on heritage sites. No prospecting activities shall take place within 50 m of any identified heritage resources such as shipwrecks.
Carbon Tax Act 15 of 2019 A taxpayer is liable to pay a carbon tax where it conducts any activities set out in Schedule 2 of the Carbon Tax Act and emits GHG emissions above the listed thresholds. Tax liability may be reduced through using the various allowances available and in some instances, the tax is only payable where the allowances are exceeded.	Throughout the entire prospecting process	The client has the responsibility to ensure that they pay carbon tax should they emit emissions above the listed thresholds or ensure that they reduce their emissions.
Environmental Impact Assessment (EIA) Regulations, 2014 (as amended). The EIA regulations, 2014 (as amended) promulgated in term of Chapter 5 of NEMA controls certain listed activities. These activities are published as Listing Notice (LN) 1 in Government Notice (GN) No. R983 (as amended) as LN 2 in GN No.R 984 (as amended) and as LN 3 in GN No. R985 (as amended). These activities are prohibited until Environmental Authorisation (EA) has been granted by the competent authority. Activities triggered under LN 1 and 3 requires that a Basic Assessment be conducted, while activities triggered under LN 2 requires that a Scoping and Environmental Impact Assessment Report be conducted.	Throughout the entire prospecting process	The proposed project triggers Listing Notice (LN) 1. A Basic Assessment Process will be undertaken and a Basic Assessment Report and stakeholder consultation report submitted as part of the application for EA. No activity will commence before EA has been granted by the Competent Authority.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
The Climate Change Act (Act 22 of 2024) Supports South Africa's transition to a low-carbon, climate-resilient economy and society, promoting an effective climate change response in line with sustainable development principles. Provides guidance across all levels of government, sectors, and stakeholders in terms of climate change adaptation efforts in South Africa in the short to medium-term. Financial institutions must integrate environmental considerations into their decision-making frameworks and contribute to climate change mitigation and resilience. The paper acknowledges that financial institutions can play an important role in mobilizing finance to mitigate the impacts of climate change in South Africa and supporting a just transition to a low carbon economy.	Throughout the entire prospecting process	The client has the responsibility to ensure that they integrate environmental considerations and mitigation measures to reduce the impacts of climate change as a result of any operations they conduct into their decision-making frameworks and business plans.
Promotion of Access to Information Act (Act 2 of 2000) Gives effect to the constitutional right of access to information held by the state or by another person when required to exercise or protect rights, and assigns related powers and duties to the Information Regulator.	Throughout the entire prospecting process	Requires the provision of relevant environmental and planning information to the public and authorities, supporting transparency during the public participation process.
Promotion of Administrative Justice Act (Act 3 of 2000) Gives effect to the constitutional right to lawful, reasonable and procedurally fair administrative action, including the right to written reasons for such action.	Throughout the entire prospecting process	Guarantees that decisions regarding approvals, permits, or refusals are made lawfully and with proper reasoning, ensuring fair administrative procedures.
The Occupational Health and Safety Act No. 85 of 1993 The Act governs health and safety at all workplaces. It is focused on the health and safety of persons at work and places the responsibility on employers "to do everything reasonably practical" to protect the welfare of their employees The Act requires that every company with more than 20 employees has to have a health and safety committee, which should be tasked with identifying potential hazards, examining the causes of any workplace incidents, investigating employee complaints and consulting with health	Throughout the entire prospecting process	The client has to ensure that they adhere to the conditions set out in this act throughout the entire process. They also have to appoint a Health and Safety Officer to supervise the health and safety performance of the company, as well as to represent the employer and management at Health and Safety Committee meetings.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
and safety inspectors. The Act also directs employers to provide and establish precautionary measures and systems to prevent workplace injuries.		
Companies Act 71 of 2008 The aim of this act is to: provide for the incorporation, registration, organisation and efficient management of companies, the capitalisation of profit companies, and the registration of offices of foreign companies carrying on business within the Republic; record-keeping and reporting by companies;	Throughout the entire prospecting process	The client must ensure that this act is adhered to throughout the entire process.
RELEVANT PROVINCIAL LEGISLATION		
Western Cape Biodiversity Act (Act 6 of 2021) This Act provides the provincial framework for conserving and managing biodiversity and ecosystems. It mandates the use of the Biodiversity Spatial Plan as a key tool for land-use planning and regulatory decision-making	Planning and Design Phase	Guides site selection and operational planning to align with provincial biodiversity priorities, including the Biodiversity Spatial Plan for marine and coastal ecosystems.
Western Cape Provincial Biodiversity Spatial Plan This is a provincial biodiversity planning tool that identifies priority and sensitive areas based on ecosystems, species, and ecological processes. It is used to integrate biodiversity into planning and decision-making, guiding conservation and sustainable development. Includes Critical Biodiversity Areas and Ecological Support Areas to inform sustainable development.	Planning and Design Phase	This spatial plan should be taken into account during the plan and design phase to inform areas for prospecting and activities should be adjusted accordingly.
Western Cape Land Use Planning Act (Act 3 of 2014) Governs provincial spatial planning and land use. Guides Spatial Development Frameworks to align with national priorities. It integrates biodiversity, heritage, agriculture, tourism, pollution, and climate adaptation, and regulates rezoning, subdivision, and consent use.	Planning and Design Phase	Requires alignment of prospecting activities with provincial spatial planning, including zoning considerations and coastal development frameworks.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
Western Cape Provincial Coastal Management Programme A strategic framework guiding sustainable coastal management and planning to align provincial programmes with national legislation and policies.	Planning and Design Phase / Throughout the entire prospecting process	Provides a framework for sustainable coastal management, ensuring that offshore prospecting activities avoid impacts on sensitive coastal and nearshore resources.
The Western Cape Provincial Spatial Development Framework (2014) The province's highest-level statutory spatial plan under the Western Cape Land Use Planning Act, setting the spatial vision and development principles and ensuring municipal Spatial Development Frameworks align with provincial and national priorities. This includes land development policies, strategies, objectives as well as growth and development strategies for the province, all of which are spatially represented.	Throughout the entire prospecting process	This legislative framework should be taken into account to promote growth and development of local communities and should be considered during the planning and design phase.
The Mining and Biodiversity Guideline (2013) Outlines six principles that should be applied during any stage of the mining for decision-making. The document uses biodiversity information for decision-making throughout the mining cycle	Throughout the entire prospecting process	This should be employed to provide a practical guideline when making decisions regarding impacts to biodiversity with respect to the prospecting activities.

8.1 Impact management outcomes and actions

8.1.1 Management Outcome: Environmental awareness training

All onsite staff are aware and understands the individual responsibilities in terms of this EMPr

Prospecting activity: N/A	**Aspects affected: N/A**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
Essential Measures: • Contractor personnel and staff should undergo environmental awareness training prior to commencement of the activities which would include being briefed about the sensitivities pertaining to the environmental and sensitive species, archaeological, heritage, and palaeontological resources, the consequences of any damage/removal of such resources • All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; • Discussion of the potential environmental impacts of prospecting activities. • The benefits of improved personal performance. • Employees' roles and responsibilities, including emergency preparedness (this should be combined with this induction, but presented by the contractors Health and Safety Representative). • Explanation of the mitigation measures that must be implemented when carrying out their activities. • Explanation of the specifics of this EMPr and its specification (no-go areas, etc.) • Explanation of the management structure of individuals responsible for matters pertaining to the EMPr. • A staff attendance register of all staff to have received environmental awareness training must be available Emergency preparedness and response procedures; • Course material must be available and presented in appropriate languages. Recommended Recommendation	Scientific Officer ECO Project manager	Before commencing with activities

8.1.2 Management Outcome: Stakeholder Consultation

Consultation with stakeholders should continue throughout the project to ensure successful management and mitigation of environmental impacts.

Prospecting activity: Throughout the project	**Aspects affected: N/A**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
Essential Measures: • Consult with relevant government departments, fishing industry/associations and local communities to discuss important fishing grounds, harvesting times, other relevant information and the possibility of altering the prospecting programme so as to minimise disruptions to both parties as required. • Appoint a fisheries liaison officer (FLO) to facilitate communication with fishing sectors. The FLO should report daily on vessel activity and respond and advise on action to be taken in the event of encountering fishing gear in the survey area. • Landowners, land occupiers and affected stakeholders should be consulted at least 1 month after the start of the survey. • Key stakeholders that need to be notified of the commencement of operations (including navigational co-ordinates of the survey area, timing and duration of proposed activities) and the likely implications thereof: o SA Marine Linefish Management Association (SAMLMA); o South African Pelagic Fishing Industry Association (SAPFIA) o West Coast Rock Lobster Association; and o Local fishing communities in Doringbaai o DFFE; o SAMSA; o South African Navy Hydrographic office; and o Overlapping and neighbouring right holders	Project Manager Scientific Officer Fishing Liaison Officer ECO	Throughout the project

8.1.3 Management Outcome: Prevent megafauna collision

Prevent injury or death of megafauna such as whales due to collision with survey vessels

Prospecting activity: Vessel operation	**Aspects affected: Marine fauna, such as marine mammals, seabirds and sea turtles**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**

• Vessel operator must keep watch for marine megafauna in the path of the vessel during vessel operation.
• At least two on-board independent Marine Mammal and Seabird observers (MMSOs) with experience in marine megafauna (including, but not limited to, all marine mammals (cetaceans and seals), sea turtles and seabirds) identification and observation techniques must be employed to carry out daylight observations and ensure compliance with mitigation measures during geophysical surveying. It must be ensured that there are sufficient MMOs on board the vessel to prevent fatigue and meet health and safety requirements, during the survey periods.
• If surveys are to be undertaken at night, it is recommended that the vessel is fitted with Passive Acoustic Monitoring (PAM) technology and employs at least two PAM operators. Utilise PAM technology when surveying at night or during adverse weather conditions and thick fog (commonly encountered on the west coast of South Africa), throughout the year.
• Activity must be restricted to specific areas or a time of year, this includes:
  o Avoid planning any surveys during the movement of migratory cetaceans (particularly baleen whales) from their southern feeding grounds into low latitude waters (**beginning of June to end of November**) and ensure that migration paths are not blocked by sonar operations;
  o Avoid planning any surveys during mating season (confirm these times with MMSOs); and
  o Confine surveys to seasons when cetaceans are scarce to ensure minimal disturbance (confirm these times with MMSOs).
• MMSOs to conduct pre-survey visual scans of at least 30 minutes for the presence of megafauna around the survey vessel prior to any vessel movement.
• Protocol must be followed to avoid mortalities and/or injuries to marine animals when they are encountered.
	MMSO
	
	PAM Operator
	
	Vessel operator
	
	Scientific Officer
		During vessel operation

Prospecting activity: Vessel operation	Aspects affected: Marine fauna, such as marine mammals, seabirds and sea turtles	
• Passive Acoustic Monitoring (PAM) technology must be incorporated into any survey programme. A designated onboard PAM Observer uses the PAM technology to detect the vocalisations of marine species, particularly during periods of low visibility, such as at night or during adverse weather conditions and thick fog, to prevent collision and impact due to acoustic survey. . It must be ensured that there are sufficient PAM operators on board the vessel to prevent fatigue and meet health and safety requirements, during the survey periods. • Suspend operations if any obvious mortalities or injuries to marine life are observed. • Make marine mammal incidence data and sound source output data from surveys available on request to the Marine Mammal Institute (MMI), DFFE and DMPR. • Ensure that MMSOs compile a survey close–out report incorporating all recorded data to the relevant DFFE authorities. • Record incidences of encounters with marine life (seabirds, turtles, seals, fish), their behaviour and response to vessel, including any attraction of predatory seabirds and incidents of feeding behaviour around the survey vessel; data on position, distance from the vessel, swimming speed and direction and obvious changes in behaviour (e.g. startle responses or changes in surfacing/diving frequencies, breathing patterns). • FVessel transit speed to not exceed 12 knots (22 km/hr), except within 25 km of the coast where it should be kept to less than 10 knots (18 km/hr) as well as when sensitive marine fauna are present in the vicinity.		

8.1.4 Management Outcome: Protection of sensitive habitats and resources

Protection of sensitive habitats and marine ecological resources from invasive sampling

Prospecting activity: Grab, core and drill sampling, tailings disposal and resource estimation phase	**Aspects affected: Benthic invertebrates, fish and any other species dependent on these habitats**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
• Should any ecologically sensitive features such as reefs be identified within the concession area during the initial acoustic survey, these must be avoided and suitably buffered. Appropriate buffers must be determined by a suitably qualified specialist. Once suitable buffers have been mapped it should be illustrated on a map and form part of the EMPr. • Planning and management of potential discharges to ensure that tailings are not discarded onto potentially sensitive habitats • Grab samples collected should be analysed as soon as possible to determine the benthic macrofaunal communities in the area. Results of this monitoring should be used to inform additional mitigation measures if required. This will also establish a baseline for comparison of any future surveys and sampling. • Reassess the potential marine impacts after completion of the geophysical surveys and biological analysis as these might elucidate areas that would need to be avoided and species of conservation concern.	Geologist Scientific Officer ECO Contractors	During invasive sampling activities

8.1.5 Management Outcome: Protection of marine fauna from noise pollution

Ensure that impact of noise on to marine fauna is minimised.

Prospecting activity: Acoustic Survey	**Aspects affected: Marine fauna, especially marine mammals**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
General <u>essential mitigation measures</u> relating to seismic impacts on marine fauna: The Joint Nature Conservation Committee (JNCC) guidelines are considered the best practice for mitigation of impacts from geophysical surveys on marine fauna within southern Africa, and must be implemented during this project. The following mitigation measures are aligned with the JNCC (2017) guidelines, as well as those identified by Mason (2017) and Koper and Plön (2012), and their implementation is expected to reduce the severity of relevant seismic impacts: • Consult and implement the JNCC (2017) guidelines before and during geophysical surveys. This list of mitigation measures does not exhaustively list those within the guidelines. • Employ on board at least two independent , appropriately qualified observer(s) / MMSO(s) with experience in seabird, turtle and marine mammal identification and observation techniques to carry out daylight observations. These observers must always be on duty during daylight seismic surveys, throughout the year. • MMSOs are to monitor the 500 m mitigation zone before and during surveys. • The pre-survey visual/PAM scans must be 30 minutes in water <200 m deep and 60 minutes in water >200 m deep. The vast majority of the 11C concession area is <200m deep. PAM may also be required on all pre-shooting searches in deeper waters (i.e. to complement visual surveys) to increase the potential to detect species with long dive times. • If spotted, wait until all marine life (seabirds, seals, cetaceans and turtles) have cleared an area of 500 m radius of the centre of the seismic source before resuming or beginning with the seismic survey. Beginning or resuming of survey must employ soft start. There must be a minimum of 20-minute delay from the start of the last detection within the mitigation zone and beginning of soft start.	MMSO PAM operator Vessel operator Scientific Officer	During Acoustic Survey

Prospecting activity: Acoustic Survey	Aspects affected: Marine fauna, especially marine mammals	
• If marine mammals or turtles are detected within the mitigation zone during the seismic survey, either during soft start or at full power, there is no requirement to halt. • Implement "soft starts" of at least 20 minutes duration when the SBP is deployed. Where practical, ramp up power in a uniform manner. However, it is acknowledged that not all sub-bottom profiler equipment allows for this. • JNCC do not advise that mitigation is required for multi-beam surveys in waters shallower than 200 m. In deeper waters, it is recommended to follow the standard approach as is laid out for impacts of airguns. • If surveys are to be undertaken at night, it is recommended that the vessel is fitted with Passive Acoustic Monitoring (PAM) technology and employs at least two PAM operators to fulfil health and safety requirements. Utilise PAM technology when surveying at night or during adverse weather conditions and thick fog (commonly encountered on the west coast of South Africa), throughout the year. • MMSOs must record and communicate marine life (seabirds, turtles, seals, fish) incidences and responses to seismic survey activity, including data on position, distance from the vessel, swimming speed and direction and obvious changes in behaviour (e.g. startle responses or changes in surfacing/diving frequencies, breathing patterns) along with seismic noise levels. • Suspend operations if any mortalities or injuries to marine life are observed. • Avoid geophysical surveys during the movement of migratory cetaceans (particularly baleen whales) from their southern feeding grounds into low latitude waters (beginning of June to end of November) and ensure that migration paths are not blocked by seismic/sonar operations. • Record seabird incidences and behaviour, including any attraction of predatory seabirds and incidents of feeding behaviour around the survey vessel.		

Prospecting activity: Acoustic Survey	Aspects affected: Marine fauna, especially marine mammals	
• Ensure that MMOs compile a survey close–out report incorporating all recorded data to the relevant DFFE authorities. • Make marine animal incidence data and seismic source output data from surveys available on request to the Marine Mammal Institute (MMI), DAFF and DMR. **<u>Essential mitigation measures</u>: Seismic disturbance to marine mammals.** • A designated onboard Marine Mammal and Seabird Observer (MMSO) must be present, to ensure compliance with mitigation measures during geophysical surveying. • MMSO to conduct pre-survey visual scans of at least 30 minutes for the presence of cetaceans around the survey vessel prior to the initiation of any acoustic impulses • "Soft starts" should be carried out for equipment with source levels greater than 210 dB re 1 µPa at 1 m over a period of 20 minutes to give adequate time for marine mammals to leave the vicinity. Where this is not possible, the equipment should be turned on and off over a 20-minute period to act as a warning signal and allow cetaceans to move away from the sound source. • Terminate the survey if any marine mammals show affected behaviour within 500 m of the survey vessel or equipment until the mammal has vacated the area. • Avoid planning geophysical surveys during the movement of migratory cetaceans (particularly baleen whales) from their southern feeding grounds into low latitude waters (beginning of June to end of November) and ensure that migration paths are not blocked by sonar operations. • Passive Acoustic Monitoring (PAM) must be incorporated into any survey programme and used to detect cetaceans, particularly during periods of low visibility. **<u>Essential mitigation measures</u>: Seismic disturbance to Seabirds** • A designated onboard Marine Mammal and Seabird Observer (MMSO) must be present, to ensure compliance with mitigation measures during geophysical surveying • MMSO to conduct pre-survey visual scans of at least 30 minutes for the presence of feeding seabirds in the survey area		

Prospecting activity: Acoustic Survey	Aspects affected: Marine fauna, especially marine mammals	
• If spotted wait until all marine life (seabirds, seals, cetaceans and turtles) have cleared an area of 500 m radius of the centre of the seismic source before resuming with seismic survey (initiate soft start procedure when resuming seismic survey). • Terminate the survey, if any seabirds show affected behaviour within 500 m of the survey vessel or equipment, until they have vacated the area. • Record incidences of encounters with marine life (seabirds, turtles, seals, fish) their behaviour and response to seismic survey activity. • Suspend operations if any obvious mortalities or injuries to marine life are observed. **<u>Recommended mitigation measures</u>: Seismic disturbance to turtles** • A designated onboard Marine Mammal, Turtle and Seabird Observer (MMSO) to ensure compliance with mitigation measures during geophysical surveying • MMSO to conduct pre-survey visual scans of at least 30 minutes for the presence of feeding turtles in the survey area • If spotted wait until all marine life (seabirds, seals, cetaceans and turtles) have cleared an area of 500 m radius of the centre of the seismic source before resuming with seismic survey (initiate soft start procedure when resuming seismic survey). • Terminate the survey, if any turtles show affected behaviour within 500 m of the survey vessel or equipment, until they have vacated the area. • Use delayed starts for operations. • Record incidences of encounters with marine life (seabirds, turtles, seals, fish) their behaviour and response to seismic survey activity. • **Suspend operations if any obvious mortalities or injuries to marine life are observed**		

Prospecting activity: Acoustic Survey	Aspects affected: Marine fauna, especially marine mammals	
<u>Recommended mitigation measures</u>: Impacts of drilling noise on marine fauna • MMSOs /PAM operators to undertake similar methods as stated above for seismic surveys, i.e. to undertake pre-drilling visual scans. Once drilling can go ahead, soft starts must be employed. • The quietest drilling method possible must be employed. • Drilling must be kept to a minimum.		

8.1.6 Management Outcome: Protection of underwater cultural heritage

Ensure impact to heritage resources is minimised

Prospecting activity: Grab, core and drill sampling, tailings disposal and resource estimation phase	**Aspects affected: Marine Heritage Resources**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
• It is recommended that the onboard Trans Atlantic representative must undergo a short induction on archaeological site and artefact recognition, as well as the procedure to follow should archaeological material be encountered during sampling. • The contractor must be notified that archaeological sites could be exposed during sampling activities, as well as the procedure to follow should archaeological material be encountered during sampling. • Areas where shipwreck sites are identified during the geophysical surveys must be excluded prior to undertaking sampling activities. • Heritage sites or objects may not be disturbed without a permit from the relevant heritage resources authority. • Any core sample sections which contain alluvial material, particularly where organic remains are present, are retained and are subject to paleo-environmental assessment. • Any fossils found during the processing of cores must have the details of context recorded, must be kept for identification by an appropriate specialist and, if significant, be deposited in an appropriate institution. • If shipwreck material is encountered during the course of sampling in any of the concession areas, the following mitigation measure should be applied: • Cease work in the directly affected area to avoid damage to the wreck until the South African Heritage Resources Agency (SAHRA) has been notified and the contractor has complied with any additional mitigation as specified by SAHRA; and • Where possible, take photographs of them, noting the date, time, location and types of artefacts found. • Under no circumstances may any artefacts be removed, destroyed or interfered on the site, unless under permit from SAHRA. • All updates and/or changes to the project, supporting documentation, correspondence, reports, or any other work relating to the project must be uploaded to the case on SAHRIS to provide SAHRA with the opportunity to comment. SAHRA does not accept emailed documents or hard-copy documents received via post. • Further additional specific conditions are provided for the development as follows: o 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. fossils, shipwrecks, Stone Age material) or other categories of heritage resources are found during the proposed development,	Trans Atlantic representative that underwent induction course Scientific Officer Contractors	During invasive sampling activities

Prospecting activity: Grab, core and drill sampling, tailings disposal and resource estimation phase	Aspects affected: Marine Heritage Resources	
SAHRA DAU (Natasha Higgitt/Nokukhanya Khumalo) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule; ○ 38(4)d – See section 51(1) of the NHRA regarding offences; ○ 38(4)e – The following conditions apply with regards to the appointment of specialists: ▪ i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, these materials must be conserved onboard the vessel and handed over to Iziko Museums Maritime Lab for inspection. The approximate location and depth of the find must be recorded and provided in a report to SAHRA;		

8.1.7 Management Outcome: Shipping safety and safety to the public:

Ensure safety of all members onboard, public safety, and safety of other vessels on sea

Prospecting activity: During vessel operation	**Aspects affected: Members on board the survey, any other vessel and members of the public**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
• Prior to the commencement of activities, key stakeholders should be consulted and informed of the proposed survey activity (including navigational co-ordinates of the survey area, timing and duration of proposed activities) and the likely implications thereof: o Mariners o DMPR o Relevant Port Captains o Marine Resources Management (MRM); o SA Marine Linefish Management Association (SAMLMA); o South African Pelagic Fishing Industry Association (SAPFIA); o South African Tuna Association (SATA); o South African Tuna Longline Association (SATLA); o Large Pelagic Small Medium & Micro Enterprises Association (LPSMME); o Local fishing communities; o DFFE; o SAMSA; o South African Navy Hydrographic office; and o Overlapping and neighbouring right holders • These stakeholders should again be notified at the completion of surveying when the survey vessel(s) is/are off location. • A health and safety officer should be appointed and Health and Safety Regulations should be adhered to. • The survey and sampling vessels must be certified for seaworthiness through an appropriate internationally recognised marine certification programme (e.g. Lloyds Register, Det Norske Veritas). The certification, as well as	Vessel operator Scientific Officer Environmental Control Officer Health and Safety Officer	During all activities

Prospecting activity: During vessel operation	Aspects affected: Members on board the survey, any other vessel and members of the public	
existing safety standards, requires that safety precautions should be taken to minimise the possibility of an offshore accident. Collision prevention equipment should include radar, multi-frequency radio, foghorns, etc. Safety equipment and training of personnel to ensure the safety and survival of the crew in the event of an accident is a further legal requirement. • A buffer of 500 m in extent should be placed around the ship in terms of the International Regulations for Preventing Collisions at Sea (Colregs 1972). To avoid or minimise potential negative impacts on fisheries due to the exclusion from fishing grounds in the vicinity of the ship, mitigation measures as recommended under the fisheries section should be implemented. • Ensure that necessary emergency procedures and protocols are in place such as: o Shipboard Oil Pollution Emergency Plan (SOPEP) in accordance with MARPOL o Emergency Response Plan o Waste Management Plan in accordance with MARPOL		

8.1.8 Management Outcome: Socio-economic and fishing:

Ensure that impacts on fishing sectors and any resultant socio-economic impacts are minimised

Prospecting activity: During vessel operation	Aspects affected: Fishing sectors	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
<u>Best practice mitigation measures</u>: Impact on fisheries • Prior to survey commencement, key stakeholders (see below) should be consulted and informed of the proposed survey activity and the likely implications thereof. **<u>Essential mitigation measures</u>: Small Pelagic Purse Seine Fisheries.**	Fishing Liaison Officer Scientific Officer ECO	During all activities

Prospecting activity: During vessel operation	Aspects affected: Fishing sectors	
• Undertake surveys when fishing effort is lower (preferably out of fishing seasons). • Appoint a fisheries liaison officer (FLO) to facilitate communication with the Small Pelagic Fishing Industry Association. The FLO should report daily on vessel activity and respond and advise on action to be taken in the event of encountering purse seine fishing vessels in the survey area. **<u>Essential mitigation measures</u>: General** • The survey and sampling vessels must be certified for seaworthiness through an appropriate internationally recognised marine certification programme (e.g. Lloyds Register, Det Norske Veritas). The certification, as well as existing safety standards, requires that safety precautions should be taken to minimise the possibility of an offshore accident. Collision prevention equipment should include radar, multi-frequency radio, foghorns, etc. Safety equipment and training of personnel to ensure the safety and survival of the crew in the event of an accident is a further legal requirement. **<u>Best practice mitigation measures</u>: General** • Prior to survey commencement, the following key stakeholders should be consulted and informed of the proposed survey activity (including navigational co-ordinates of the survey area, timing and duration of proposed activities) and the likely implications thereof: · Fishing industry / associations (contactable via liason@fishsa.org): ➢ South African Tuna Longline Association (SATLA) ➢ Large Pelagic Small Medium & Micro Enterprises Association (LPSMME) ➢ Local fishing communities; · Other associations and organs of state ➢ SAMSA; These stakeholders should again be notified at the completion of surveying when the survey vessel(s) is/are off location. The operator must request, in writing, that the South African Navy Hydrographic office release Radio Navigation Warnings and Notices to Mariners throughout the		

Prospecting activity: During vessel operation		Aspects affected: Fishing sectors	
.	survey periods. The Notice to Mariners should give notice of (1) the co-ordinates of the proposed survey area, (2) an indication of the proposed timeframes of surveys and day-to-day location of the survey vessel(s), and (3) an indication of the required safety zone(s) and the proposed safe operational limits of the survey vessel. These Notices to Mariners should be distributed timeously to fishing companies and directly onto vessels where possible.		

8.1.9 Management Outcome: Waste management and water pollution:

Prospecting activity: During vessel operation	**Aspects affected: Marine environment and species**	
MITIGATION MEASURE/ MANAGEMENT ACTION	**Responsible person**	**Timeframe**
Hazardous Substances is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995; • Solid waste means all solid waste, including construction debris, hazardous waste, wrapping materials, timber, cans, drums, wire, nails, cigarette buds, food and domestic waste (e.g. plastic packets and wrappers); • Contractor personnel and staff should undergo waste management and spill management training and be informed about sensitive marine species & suitable disposal of waste; • Ensure compliance with relevant MARPOL standards; • Develop a waste management plan using waste hierarchy; • A Shipboard Oil Pollution Emergency Plan (SOPEP) must be prepared for all vessels and should be in place at all times during operations; • Deck drainage should be routed to a separate drainage system (oily water catchment system) for treatment to ensure compliance with MARPOL (15 ppm); • All process areas should be bunded to ensure drainage water flows into the closed drainage system; • Drip trays should be used to collect run-off from equipment that is not contained within bunded areas and the contents routed to the closed drainage system; • Low-toxicity biodegradable detergents should be used in the cleaning of all deck spillages; • All hydraulic systems should be adequately maintained and hydraulic hoses should be frequently inspected; and • No waste or pollution in the environment is allowed. The applicant shall be liable for the cost of any remedial action which has to be carried in addition to a fine equal to the transgression. • Appropriate pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended materials into watercourses or water bodies must be designed and implemented; • Runoff from the ship must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; • All measures regarding waste management must be undertaken using an integrated waste management approach; • Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	All members on board the vessel	Throughout the project

Prospecting activity: During vessel operation	Aspects affected: Marine environment and species	
• General waste produced onsite must be disposed of at recognised waste disposal sites/ recycling company; • Hazardous waste must be disposed of at a registered waste disposal site; • Certificates of safe disposal for general, hazardous and recycled waste must be maintained. • The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; • All hazardous substances will be stored in suitable containers as defined in the Method Statement; • Containers will be clearly marked to indicate contents, quantities and safety requirements; • All storage areas will be bunded. The bunded area will be of sufficient capacity to contain a spill / leak from the stored containers; • An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis; • All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS); • Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; • The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers • No smoking must be allowed within the vicinity of the hazardous storage areas; • Adequate fire-fighting equipment must be made available at all hazardous storage areas; • An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; • The responsible operator must have the required training to make use of the spill kit in emergency situations; **Waste discharge during vessel operation** **Essential mitigation measures:** • Inform & empower all staff about sensitive marine species & suitable disposal of waste; • Ensure compliance with relevant MARPOL standards; • A Shipboard Oil Pollution Emergency Plan (SOPEP) must be prepared for all vessels and should be in place at all times during operations; • Deck drainage should be routed to a separate drainage system (oily water catchment system) for treatment to ensure compliance with MARPOL (15 ppm); • All hydraulic systems should be adequately maintained and hydraulic hoses should be frequently inspected; and		

Prospecting activity: During vessel operation	Aspects affected: Marine environment and species	
• Spill management training and awareness should be provided to crew members of the need for thorough cleaning-up of any spillages immediately after they occur in order to minimise the volume of contaminants washing off decks. **Best practice mitigation measures:** • Develop a waste management plan using waste hierarchy; • All process areas should be bunded to ensure drainage water flows into the closed drainage system; • Drip trays should be used to collect run-off from equipment that is not contained within bunded areas and the contents routed to the closed drainage system; • Low-toxicity biodegradable detergents should be used in the cleaning of all deck spillages;		


ANCHOR
environmental