DRAFT BASIC ASSESSMENT REPORT

for

AFRO FISHING FISHMEAL & FISH OIL REDUCTION FACILITY

on

Quay 2, Port of Mossel Bay, Mossel Bay

In terms of the

National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended & National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)

Prepared for Applicant: **Afro Fishing (Pty) Ltd**

Date: **8 November 2019**

Author of Report: Melissa Mackay
Author Email: mel@cape-eaprac.co.za

Report Reference: **MOS569/08**
Department Reference: **16/3/3/1/D6/28/0027/19**
Case Officer: **Mr Steve Kleinhans**

Cape EAPrac
Cape Environmental Assessment Practitioners

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APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONER:

Cape EAPrac Environmental Assessment Practitioners

PO Box 2070

George

6530

Tel: 044-874 0365

Fax: 044-874 0432

Report written & compiled by: **Melissa Mackay** (BTech & ND Nature Conservation), who has thirteen years' experience as an environmental practitioner.

Registrations: Director, **Louise-Mari van Zyl** (MA Geography & Environmental Science [US]; Registered Environmental Assessment Practitioner with the Interim Certification Board for Environmental Assessment Practitioners of South Africa, EAPSA). Ms van Zyl has over fifteen years' experience as an environmental practitioner.

PURPOSE OF THIS REPORT:

Basic Assessment Report to inform an Environmental Authorisation

APPLICANT:

Afro Fishing (Pty) Ltd

CAPE EAPRAC REFERENCE NO:

MOS569/08

DEPARTMENT REFERENCE:

16/3/3/1/D6/28/0027/19

SUBMISSION DATE

08 November 2019

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National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended & National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)

Afro Fishing Fishmeal & Fish Oil Reduction Facility

Quay 2, Port of Mossel Bay, Mossel Bay

Submitted for:

Stakeholder Review & Comment

Report Issued by:
Cape Environmental Assessment Practitioners

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PO Box 2070
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ORDER OF REPORT

VOLUME ONE

BASIC ASSESSMENT REPORT

Appendix A	:	Location & Topographical Plans
Appendix B		Site Development Plans
Appendix C	:	Site Photographs
Appendix D	:	Biodiversity Plans
Appendix E	:	Permits / Licenses
Annexure E1	:	Heritage Western Cape Correspondence
Annexure E2	:	TNPA Letter of Support
Annexure E3	:	Municipal Confirmation of Services
Annexure E4	:	Coastal Waters Discharge Permit
Appendix F	:	Public Participation
Annexure F1	:	Registered I&AP List
Annexure F2	:	Adverts & Site Notices
Annexure F3	:	Stakeholder Notification
Annexure F4	:	Stakeholder Comments
Annexure F5	:	Comments & Responses Report
Annexure F6	:	Media Articles

VOLUME TWO

Appendix G	:	Specialist Reports
Annexure G1	:	Air Quality Impact Assessment
Annexure G2	:	Socio Economic Impact Assessment
Annexure G3	:	Traffic Impact Assessment
Annexure G4	:	Planning Report
Annexure G5	:	Electrical Bulk Supply Report
Annexure G6	:	Services Report
Annexure G7	:	Visual Statement
Annexure G8	:	Heritage Notice of Intent to Develop

Appendix H	:	Environmental Management Programme
Appendix I	:	Additional information for waste management (Not Applicable)
Appendix J	:	Impact Assessment Description (see in report)
Appendix K	:	Other
Annexure K1	:	Authority Correspondence
Annexure K2	:	TNPA Port Planning Layouts
Annexure K3	:	DAFF 2018 Pelagic Biomass Results
Annexure K4	:	DAFF 2019 Final Sardine TAC & Anchovy TAB Adjustment
Annexure K5	:	EAP CV & Company Profile
Annexure K6	:	DEA Screening Tool Report
Annexure K7	:	Carpe Ambiente TMA Measurement Report
Annexure K8	:	Fact Finding Feedback Report

TABLE OF CONTENTS

FIGURES

TABLES

PHOTOGRAPHIC PLATES

CONTENT OF BASIC ASSESSMENT REPORTS

Appendix 1 of the 2014 EIA Regulations (as amended) contains the required contents of a Basic Assessment Report. The checklist below serves as a summary of how these requirements were incorporated into this Basic Assessment Report.

Requirement	***Details***
(a) Details of - *(i) The EAP who prepared the report; and* *(ii) The expertise of the EAP, including, curriculum vitae.* *(iii) Applicant Details*	Ms Melissa Mackay (BTech & ND Nature Conservation) prepared this report. Ms Mackay has over 13 years' experience as and EAP. CV is included as Appendix K5. Afro Fishing (Pty) Ltd PO Box 2752, Mossel Bay, 6500 Tel: (044) 690 5520 Fax: (044) 690 5525 Email: deon@afrofishing.co.za
(b) The location of the activity, including – *(i) The 21 digit Surveyor General code of each cadastral land parcel;* *(ii) Where available, the physical address and farm name;* *(iii) Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties.*	C05100070001245900000 Quay 2, Port of Mossel Bay, Mossel Bay, Western Cape
(c) a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is *(i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or* *(ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken.*	See Appendices A and B as well as Section 1 of the Basic Assessment Report.
(d) a description of the scope of the proposed activity, including - *(i) All listed and specified activities triggered and being applied for; and* *(ii) A description of the activities to be undertaken including associated structures and infrastructure.*	See Section 2 of the Basic Assessment Report. Section 2 of the Basic Assessment Report Sections 1-5 of the Basic Assessment Report
(e) A description of the policy and legislative context	See Section 2 of the Report Summary

Requirement	***Details***
within which the development is proposed, including – *(i) An identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and* *(ii) How the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks and instruments.*	
(f) A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location.	See Section D of this report
(g) A motivation for the preferred site, activity and technology alternative.	See Section E of this report
(h) A full description of the process followed to reach the proposed preferred alternative within the site, including -	
(i) Details of all alternatives considered;	See Section E2 of this report
(ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	See Section C of this report
(iii) A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	See Section C of this report
(iv) The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section F of this report
(v) The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts: *(aa) can be reversed;* *(bb) may cause irreplaceable loss of resources; and* *(cc) can be avoided, managed or mitigated.*	See Section G of this report
(vi) The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	See Section G.1 of this report
(vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	See Section G of this report

Requirement	***Details***
(viii) The possible mitigation measures that could be applied and level of residual risk;	See Section G of this report
(ix) The outcome of the site selection matrix;	See Section G of this report
(x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	See E this report
(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity.	See Section E of this report
(i) A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including –	See Section G of this report
(ii) A description of all environmental issues and risks that were identified during the environmental impact assessment process; and	See Section G of this report
(iii) An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.	See Section G of this report
(j) An assessment of each identified potentially significant impact and risk, including - *(i) Cumulative impacts;* *(ii) The nature, significance and consequences of the impact and risk;* *(iii) The extent and duration of the impact and risk;* *(iv) The probability of the impact and risk occurring;* *(v) The degree to which the impact and risk can be reversed;* *(vi) The degree to which the impact and risk may cause irreplaceable loss of resources; and* *(vii) The degree to which the impact and risk can be mitigated.*	See Section G of this report
(k) Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report.	See Section H of this report
(l) An environmental impact statement which contains: *(i) A summary of the key findings of the environmental impact assessment;* *(ii) A map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided,*	See G. of this report

Requirement	***Details***
including buffers; and *(iii) A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.*	See Section G of this report
(m) Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr.	See Section G.5 of this report
(n) Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation.	See Section G of this report
(o) A description of assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed.	See Section G.5 of this report
(p) A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation.	See Section H of this report
(q) Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded and the post construction monitoring requirements finalised.	Not Applicable. The proposed activity includes the operational aspects of the fishmeal facility.
(r) An undertaking under oath or affirmation by the EAP in relation to: *(i) The correctness of the information provided in the reports;* *(ii) The inclusion of comments and inputs rom stakeholders and I&APs;* *(iii) The inclusion of inputs and recommendations from the specialist reports where relevant; and* *(iv) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.*	Declarations
(s) Where applicable, details of any financial provisions for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts.	See Appendix H of this report
(t) Any specific information that may be required by the competent authority.	Not Applicable
(u) Any other matters required in terms of section 24(4)(a) and (b) of the Act.	Not Applicable

ABBREVIATIONS

BGIS	*Biodiversity Geographic Information System*
BID	*Background Information Document*
CBD	*Central Business District*
CDSM	*Chief Directorate Surveys and Mapping*
CEMP	*Construction Environmental Management Plan*
DEA	*Department of Environmental Affairs*
DEA&DP	*Department of Environmental Affairs and Development Planning*
EAP	*Environmental Impact Practitioner*
EHS	*Environmental, Health & Safety*
EIA	*Environmental Impact Assessment*
EIR	*Environmental Impact Report*
EMP	*Environmental Management Programme*
GPS	*Global Positioning System*
HIA	*Heritage Impact Assessment*
HWC	*Heritage Western Cape*
I&APs	*Interested and Affected Parties*
IDP	*Integrated Development Plan*
LUDS	*Land Use Decision Support*
LUPO	*Land Use Planning Ordinance*
NEMA	*National Environmental Management Act*
NEMAA	*National Environmental Management Amendment Act*
NEMBA	*National Environmental Management: Biodiversity Act*
NHRA	*National Heritage Resources Act*
NID	*Notice of Intent to Develop*
NSBA	*National Spatial Biodiversity Assessment*
NWA	*National Water Act*
PM	*Post Meridiem; "Afternoon"*
SAHRA	*South African National Heritage Resources Agency*
SANBI	*South Africa National Biodiversity Institute*
SANS	*South Africa National Standards*
SDF	*Spatial Development Framework*
SMME	*Small, Medium and Micro Enterprise*
SAPD	*South Africa Police Department*
TIA	*Traffic Impact Assessment*
VIA	*Visual Impact Assessment*

BASIC ASSESSMENT REPORT

IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED)

October 2017

1. PROJECT TITLE

Afro Fishing Fishmeal & Fish Oil Reduction Facility

11 November 2019

REPORT TYPE CATEGORY	*REPORT REFERENCE NUMBER*	*DATE OF REPORT*
Pre-Application Basic Assessment Report (if applicable)[1]	MOS569/01 Background Information Document & Preliminary Air Quality Impact Assessment	22 February 2019
Draft Basic Assessment Report[2]	MOS569/08	11 November 2019
Final Basic Assessment Report[3] or, if applicable Revised Basic Assessment Report[4] (strikethrough what is not applicable)		

Notes:

1. *In terms of Regulation 40(3) potential or registered interested and affected parties, including the Competent Authority, may be provided with an opportunity to comment on the Basic Assessment Report prior to submission of the application but must again be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. The Basic Assessment Report released for comment prior to submission of the application is referred to as the "Pre-Application Basic Assessment Report". The Basic Assessment Report made available for comment after submission of the application is referred to as the "Draft Basic Assessment Report". The Basic Assessment Report together with all the comments received on the report which is submitted to the Competent Authority for decision-making is referred to as the "Final Basic Assessment Report".*

2. *In terms of Regulation 19(1)(b) if significant changes have been made or significant new information has been added to the Draft Basic Assessment Report , which changes or information was not contained in the Draft Basic Assessment Report consulted on during the initial public participation process, then a Final Basic Assessment Report will not be submitted, but rather a "Revised Basic Assessment Report", which must be subjected to another public participation process of at least 30 days, must be submitted to the Competent Authority together with all the comments received.*

2. DEPARTMENTAL REFERENCE NUMBER(S)

Pre-application reference number:	16/3/3/6/7/1/D6/28/0122/19
File reference number (EIA):	16/3/3/1/D6/28/0027/19
NEAS reference number (EIA):	
~~*File reference number (Waste):*~~	
~~*NEAS reference number (Waste):*~~	
File reference number (Air Quality):	TBC
NEAS reference number (Air Quality):	
~~*File reference number (Other):*~~	
~~*NEAS reference number (Other):*~~	

3. CONTENT AND GENERAL REQUIREMENTS

Note that:

1. *The content of the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), any subsequent Circulars, and guidelines must be taken into account when completing this Basic Assessment Report Form.*
2. *This Basic Assessment Report is the standard report format which, in terms of Regulation 16(3) of the EIA Regulations, 2014 (as amended) must be used in all instances when preparing a Basic Assessment Report for Basic Assessment applications for an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA")and the EIA Regulations, 2014 (as amended) and/or a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM:WA"), and/or an atmospheric emission licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA") when the Western Cape Government: Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority/Licensing Authority.*
3. *This report form is current as of October 2017. It is the responsibility of the Applicant/ Environmental Assessment Practitioner ("EAP") to ascertain whether subsequent versions of the report form have been released by the Department. Visit the Department's website at* **Error! Hyperlink reference not valid.** *http://www.westerncape.gov.za/eadp to check for the latest version of this checklist.*
4. *The required information must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The tables may be expanded where necessary.*
5. *The use of "not applicable" in the report must be done with circumspection. All applicable sections of this report form must be completed. Where "not applicable" is used, this may result in the refusal of the application.*
6. *While the different sections of the report form only provide space for provision of information related to one alternative, if more than one feasible and reasonable alternative is considered, the relevant section must be copied and completed for each alternative.*
7. *Unless protected by law, all information contained in, and attached to this report, will become public information on receipt by the competent authority. If information is not submitted with this report due to such information being protected by law, the applicant and/or EAP must declare such non-disclosure and provide the reasons for believing that the information is protected.*
8. *Unless otherwise indicated by the Department, one hard copy and one electronic copy of this report must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.*
9. *This Report must be submitted to the Department and the contact details for doing so are provided below.*
10. *Where this Department is also identified as the Licencing Authority to decide applications under NEM:WA or NEM:AQA, the submission of the Report must also be made as follows, for-*
    - *Waste management licence applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (tel: 021-483-2756 and fax: 021-483-4425) at the same postal address as the Cape Town Office.*
    - *Atmospheric emissions licence applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (tel: 021 483 2798 and fax: 021 483 3254) at the same postal address as the Cape Town Office.*

3.1 DEPARTMENTAL DETAILS

~~CAPE TOWN OFFICE~~		GEORGE REGIONAL OFFICE
~~REGION 1~~ ~~(City of Cape Town & West Coast District)~~	~~REGION 2~~ ~~(Cape Winelands District & Overberg District)~~	REGION 3 (Central Karoo District & Eden District)
~~Department of Environmental Affairs and Development Planning~~ ~~Attention: Directorate: Development Management (Region 1)~~ ~~Private Bag X 9086~~ ~~Cape Town,~~ ~~8000~~ ~~Registry Office~~ ~~1st Floor Utilitas Building~~ ~~1 Dorp Street,~~ ~~Cape Town~~ ~~Queries should be directed to the Directorate: Development Management (Region 1) at:~~ ~~Tel.: (021) 483-5829~~ ~~Fax: (021) 483-4372~~	~~Department of Environmental Affairs and Development Planning~~ ~~Attention: Directorate: Development Management (Region 2)~~ ~~Private Bag X 9086~~ ~~Cape Town,~~ ~~8000~~ ~~Registry Office~~ ~~1st Floor Utilitas Building~~ ~~1 Dorp Street,~~ ~~Cape Town~~ ~~Queries should be directed to the Directorate: Development Management (Region 2) at:~~ ~~Tel.: (021) 483-5842~~ ~~Fax: (021) 483-3633~~	Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel.: (044) 805-8600 Fax: (044) 805 8650

3.2 TABLE OF CONTENTS

3.3 ACRONYMS USED IN THIS BASIC ASSESSMENT REPORT AND APPENDICES:

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
DEA	National Department of Environmental Affairs
DEA&DP	Western Cape Government: Environmental Affairs and Development Planning
DWS	National Department of Water and Sanitation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Ecological Support Area
HWC	Heritage Western Cape
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM:ICMA	National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
PPP	Public Participation Process

3.4 DETAILS OF THE APPLICANT

Applicant / Organisation / Organ of State:	Afro Fishing (Pty) Ltd		
Contact person:	Mr Deon van Zyl (Managing Director)		
Postal address:	PO Box 2752, Mossel Bay		
Telephone:	(044) 690 5520	*Postal Code:*	6500
Cellular:	079 378 5669	*Fax:*	(044) 690 5525
E-mail:	deon@afrofishing.co.za		

3.5 **DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")**

Name of the EAP organisation:	Cape Environmental Assessment Practitioners (Cape EAPrac)		
Person who compiled this Report:	Ms Melissa Mackay (Snr Consultant)		
EAP Reg. No.:	Director certified as an Environmental Assessment Practitioners with the Interim Certification Board for Environmental Assessment Practitioners of South Africa (EAPSA).		
Contact Person (if not author):	Ms Louise-Mari van Zyl (Director)		
Postal address:	P.O. Box 2035, George		
Telephone:	(044) 874 0365	*Postal Code:*	6530
Cellular:	071 603 4132	*Fax:*	(044) 874 0432
E-mail:	mel@cape-eaprac.co.za		
EAP Qualifications:	BTech & ND Nature Conservation / MA Geography and Environmental Science (Director)		

Please provide details of the lead EAP, including details on the expertise of the lead EAP responsible for the Basic Assessment process. Also attach his/her Curriculum Vitae to this BAR.

Melissa Mackay (BTech & ND Nature Conservation) has thirteen years' experience as an environmental practitioner

See Appendix K5 for EAP CV

4. EXECUTIVE SUMMARY OF THE BASIC ASSESSMENT REPORT:

4.1 INTRODUCTION

Cape Environmental Assessment Practitioners (Cape EAPrac) has been appointed as the

independent Environmental Assessment Practitioner (EAP) to facilitate the legally required Environmental Application Process in terms of the National Environmental Management Act (NEMA, Act No 107 of 1998 as amended), the 2014 Environmental Impact Assessment (EIA) Regulations & the National Environmental Management: Air Quality Act (NEM:AQA, Act 39 of 2004), for the proposed development of a fish meal and fish oil reduction facility on the old I&J properties on Quay 2 of the Port of Mossel Bay on behalf of the Applicant, Afro Fishing (Pty) Ltd.

The competent authority in this case is the Western Cape Department of Environmental Affairs & Development Planning (DEA&DP): George office and the Garden Route District Municipality.

The proposal is an expansion to the existing Afro Fishing cannery on Quay 1 of the Port of Mossel Bay.

4.2 LEGISLATIVE AND POLICY FRAMEWORK

The legislation that is relevant to this study is briefly outlined below. These requirements are not intended to be definitive or exhaustive but serve to highlight key environmental legislation and responsibilities only. It must be noted that the fishing and fish processing industry is also governed by several additional pieces of legislation that are mandated by the Department of Environment, Forestry & Fisheries, as well as the Department of Health.

- THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The Constitution of the Republic of South Africa (Act 108 of 1996) states that everyone has a right to a non-threatening environment and that reasonable measures are applied to protect the environment. This includes preventing pollution and promoting conservation and environmentally sustainable development, while promoting justifiable social and economic development.

This application is intended as a private commercial venture. The proposed land use is consistent with the current use and with the surrounding industrial land use type. It is intended as a value-adding and diversifying component to the existing cannery plant already in operation on the adjacent site. The project will generate additional employment opportunities in the fishing industry, specifically in the Mossel Bay area.

- NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA)

The current assessment is being undertaken in terms of the National Environmental Management Act (NEMA, Act 107 of 1998 as amended). This Act makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case, the provincial Department of Environmental Affairs & Development Planning, DEA&DP) based on the findings of an Environmental Assessment.

The proposed scheme entails one listed activity, which requires a Basic Assessment (BA) process, which must be conducted by an independent environmental assessment practitioner (EAP).

Table 1: NEMA 2014 listed activities

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1 (GN No. 327)	Describe the portion of the proposed project to which the applicable listed activity relates.
34	The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions,	Afro Fishing is proposing a fishmeal and fish oil reduction facility on the old I&J site on Quay 2, immediately adjacent to their existing cannery in the Port of Mossel Bay. The fishmeal facility will have a design capacity exceeding 1000kgs and as such will require an

	effluent or pollution.	Atmospheric Emissions License (AEL) in terms of the NEM:AQA. The increased volume of water to be discharged with the current effluent authorised in terms of the NEM:ICMA Coastal Waters Discharge Permit will require an amendment to the existing permit.

Only in the event that the above mentioned listed activity is authorised by the DEA&DP, may the necessary AEL be authorised by the Garden Route District Municipality and the amendment to the Coastal Waters Discharge Permit by the Department of Environment, Forestry & Fisheries (DEFF). Should the DEA&DP approve the proposed activity, the Environmental Authorisation does not exclude the need for obtaining relevant approvals from other Authorities who have a legal mandate i.e. the Department of Fisheries for fishing permits etc.

Considering the best practice principle of NEMA as well as duty of care, this activity is unlikely to cause detrimental environmental impacts for the following key reasons:

(i) the site is already transformed and developed with infrastructure for the purposes of fisheries industry without impacting negatively on the receiving environment;

(ii) the expansion will increase employment opportunities and income generation potential associated with the proposed activity supports social as well as economic development;

(iii) the site falls within an area designated for industrial land uses, particularly those associated with commercial fisheries;

(iv) air quality impacts associated with the activity can be mitigated by implementing Best Available Technology in the form of Re-generative Thermal Oxidation (RTO); and

(v) the local Municipality can provide for services associated with this activity.

- NATIONAL ENVIRONMENTAL MANAGEMENT LAWS AMENDMENT ACT (ACT 25 OF 2014)

The NEM: Laws Amendment Act came into effect on the 2nd June 2014. This Act amends certain provisions, definitions, expressions, provides clarity on issues and information related to both NEMA and NEM:AQA.

The applicability of this Act in reference to this application is related to the revised Public Participation requirements. In terms of this Act, stakeholders are provided with a 30 day comment period on the Basic Assessment Report.

- NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT (NEM:AQA, ACT 39 OF 2004)

The current assessment is being undertaken in terms of the National Environmental Management Act (NEMA, Act 107 of 1998 as amended) and the National Environmental Management: Air Quality Act (Act 39 of 2004). These Acts makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case, the provincial Department of Environmental Affairs & Development Planning, DEA&DP and the Garden Route District Municipality) based on the findings of an Environmental Assessment.

The relevant activity requiring an AEL in term of NEM:AQA is as follows:

Category 10

Animal Matter Processing

Description:	Processes for the rendering cooking, drying, dehydrating, digesting, evaporating or protein concentrating of any animal matter not intended for human consumption.
Application:	All installations handling more than 1 ton of raw materials per day.

This activity relates to the processing of fresh fish for use in animal feed in the from of fishmeal. The production of fish oil is intended for human consumption and as such does not fall within the ambit of this activity.

- NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY (ACT 10 OF 2004)

NEM:BA is a Special Environmental Management Act (SEMA) and makes provision for the management and conservation of South Africa's biodiversity within the framework of NEMA. The Act further provides for protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bio-prospecting involving biological resources and the establishment and functions of the South African Biodiversity Institute (SANBI).

SANBI specifies ecosystem status categories that are used in the various Biodiversity Programmes. With respect to the latest Critical Biodiversity Areas (CBA) identified for the Garden Route, it has been confirmed that the property does not fall within a portion of the CBA area or any other important biodiversity area or threatened ecosystem. As such this Act is not considered relevant to this application.

4.1 NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, NO 59 OF 2008

This Act aims to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

The facility will be using fresh fish to process for the fishmeal and fish oil, along with a small quantity of material from the existing cannery. A Waste Management License is not required for the processing of the raw materials, the NEM:WA is not applicable to this application.

- NATIONAL HERITAGE RESOURCES ACT (Act 25 of 1999)

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999). South African National Heritage Resources Agency (SAHRA) is the enforcing authority in the Northern Cape, and is registered as a Stakeholder for this environmental process.

In terms of Section 38 of the National Heritage Resources Act, provision is made for the assessment of heritage impacts as part of an EIA process.

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, if the following activities are relevant:

- *the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*

- *any development or other activity which will change the character of a site exceeding 5 000 m² in extent;*
- *the re-zoning of a site exceeding 10 000m² in extent.*

Since the facility is to be rebuilt on an existing site and will remain within the current building restrictions and will not change the built environment, the NHRA is not applicable to this application.

This has been confirmed with Heritage Western Cape by means of the submission of a Notice of Intent to Develop (NID). The correspondence with HWC has been included as Appendix E of this report.

o NATIONAL FORESTS ACT (NO. 84 OF 1998):

The National Forests Act provides for the protection of forests as well as specific tree species, quoting directly from the Act: "*no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence or exemption granted by the Minister to an Applicant and subject to such period and conditions as may be stipulated*".

The development footprint does not contain any protected trees, as such the NFA is not applicable.

4.2 DEA SCREENING TOOL

The submission of a report generated from the national web-based environmental screening tool, as contemplated in Regulation 16(1)(b)(v) of the Environmental Impact Assessment Regulations, 2014, published under Government Notice No. R982 in Government Gazette No. 38282 of 4 December 2014, as amended, came into effect as of 4 October 2019. The report uses national datasets to identify site sensitivities and potential specialist studies that may be required for any particular development. Since the datasets are not necessarily ground truthed, there may be instances where the required specialist study is in actual fact not necessary. Below is a list of the studies generated by the Screening Tool for the Afro Fishing expansion and the motivations as to whether or not the investigation has been done or is required.

Table 2: DEA Screening Tool Requirements

No.	Specialist assessment	✓ / ✗	Assessment Protocol Reasoning
1	Agricultural Impact Assessment	✗	The site is within the Port of Mossel Bay, is not zoned for agriculture and has not had any use for agriculture since the inception of the port.
2	Landscape/Visual Impact Assessment	✓	A Visual Statement was prepared by the Architect to provide a concept visual representation of the proposed redevelopment of the old I&J site. The bulk and heights of the redevelopment will be in keeping with the current building and as such no impact assessment was required.
3	Archaeological and Cultural Heritage Impact Assessment	✓	A Notice of Intent to Develop was submitted to Heritage Western Cape who confirmed that no further assessments are required for the redevelopment of the site.
4	Palaeontology Impact Assessment	✗	A Notice of Intent to Develop was submitted to Heritage Western Cape who confirmed that no further assessments are required for the redevelopment of the site.

5	Terrestrial Biodiversity Impact Assessment	✗	The screening tool identifies the site as being of a Very High sensitivity due to the ecosystem layer which indicates that the site is part of an Endangered Ecosystem. It must be noted that the entire site is concreted and significantly transformed, forms part of the Port of Mossel Bay and has no remaining vegetation on it. Furthermore, when considering the 2017 Western Cape Biodiversity Sector Plan (BSP), the dataset has been amended to exclude the areas that have been completely transformed. As such no impact assessment is required. Please refer to the Site Photographs in Appendix C, the Biodiversity Plans in Appendix D as well as the response report to the Screening Tool in Annexure K6.
6	Aquatic Biodiversity Impact Assessment	✗	The Port of Mossel Bay does not include any aquatic features and has been significantly transformed. The Screening Tool also clearly identifies the site as having Low Sensitivity for aquatic features.
7	Hydrology	✗	The Port of Mossel Bay does not include any aquatic features and has been significantly transformed. The Screening Tool also clearly identifies the site as having Low Sensitivity for aquatic features.
8	Noise Impact Assessment	✗	The activities proposed will take place within a working harbour, inside enclosed buildings. Noise during construction has been considered by the Socio-Economic specialist and no further assessment is deemed necessary.
9	Traffic Impact Assessment	✓	A Traffic Impact Assessment was undertaken and is included as Annexure G3. Traffic impacts are expected to be negligible.
10	Health Impact Assessment	✓	No specific Health Impact Assessment has been undertaken, but possible health issues have been addressed in the Air Quality Impact Assessment with regards to odour.
11	Socio-Economic Assessment	✓	A Socio-Economic Impact Assessment was undertaken and has been included as Annexure G2.
12	Ambient Air Quality Impact Assessment	✗	No Ambient Air Quality Impact Assessment has been undertaken as a full Air Quality Impact Assessment has been done.
13	Air Quality Impact Assessment	✓	An Air Quality Impact Assessment has been undertaken and has been included as Annexure G1.
14	Plant Species Assessment	✗	The site identified for the expansion is completed concreted and significantly transformed. It does not support any potentially endangered plant species and has not since the inception of the port.
15	Animal Species Assessment	✗	The site identified for the expansion is completed concreted and significantly transformed. It does not support any potentially endangered animal species and has not since the inception of the port.

A copy of the full report is included as Annexure K6 of this BAR.

4.3 SPECIALIST IMPACT ASSESSMENTS

The following specialist assessments and technical reports were undertaken as part of the Environmental Impact Assessment process:

- Air Quality Impact Assessment by Lethabo Air Quality Specialists (LAQS);
- Socio-Economic Impact Assessment by Multi Purpose Business Solutions (MPBS);
- Traffic Impact Assessment by Urban Engineering;
- Planning Statement by DelPlan;
- Electrical Supply Report by Makukhane Consulting Engineers;
- Services Report by V3 Engineering;
- Visual Statement by Francois van Zyl Architects; and
- Heritage Notice of Intent to Develop by Perception Planning.

Complete copies of these reports are included as Appendix G of this report.

4.4 ACTIVITY

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is proposed on the current footprint of the old I&J facility, with a new canning store adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The expansion project will include the following:

1. Fish meal and oil reduction plant
2. Fish freezing plant
3. Cold store
4. Fish meal warehouse
5. New canned product warehouse

The reduction process will include the following unit operations:

-- Cooking

-- Pressing

-- Liquid-solid separation

-- Indirect steam drying

-- Waste heat evaporation

-- Oil-liquid separation

-- Cooling / grinding / bagging

-- Boilers for steam generation.

The plant will have a capacity to process a maximum of ±1 000 tons of raw fish per day. The proposed project will produce fish meal and fish oil products for export markets. The project will positively impact local service providers, the Mossel Bay economy, SMME's and ancillary industries. In terms of employment opportunities, the expansion will increase direct employment from 341 to approximately 560 persons.

Afro Fishing (Pty) Ltd envisages a total investment of R350-400m in this project. The investment will diversify Afro Fishing into other fisheries, namely anchovy, sardinella and red-eye herring. The project will increase the canned fish production of which a large percentage of the canned fish production

goes into the National Schools Nutrition Programme where Afro Fishing supplies 'affordable protein' for school feeding.

The design of the plant, especially the use of RTO (re-generative thermal oxidation) is based on a similar facility, Narciso Dias & Filhos, LDA, located in Peniche, Portugal. The reason for this is due to the similarity in location (seaside town) with tourism as a main driver for the economy. The use of RTO in the plant led to significantly improved odour control management and eliminated offensive odour problems previously experienced. The RTO destroys Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs) and odorous emissions that are often discharged from industrial or manufacturing processes.

The RTO represents the Best Available Technology (BAT) currently available in the world for odour management. There are currently no such plants in South Africa in the fishing / fishmeal industry.

Plant Operation and Management

Offloading of fish

Depending on the size and capacity of the fishing vessel, approximately two to four vessels are expected to dock at the plant's jetty per day during the peak fishing season. Once the vessel has docked, fish will be pumped off the vessel using a wet offloading pneumatic suction system. The fish is conveyed through closed pipelines to a set of industrial batch scales and weighed. The fish is then pumped or conveyed into stainless steel tanks to limit the impact of high ambient temperatures.

Water pumped off the vessel will be removed from the fish using dewatering screens. The cold water will be recycled and returned to the fishing vessel. Once the vessel is offloaded this water will either be treated by the factory or returned to the fishing vessel for dumping at sea.

The plant and its management are responsible for the vessel and carry liability for any pollution emanating from the vessel while it is docked at the jetty of the fishmeal plant. Once in the bay, responsibility and liability for the vessels transfers to the owner of the boat.

Fish processing

The fish processing sequence is as follows:

- From the stainless-steel storage tank, the fish mass is pumped or conveyed to the cookers. The cooker screw that transports the fish through the cooker is powered by an electric motor. The fish is cooked using steam generated by LSO-fired boilers. Cooking coagulates the protein, ruptures the fat deposits and liberates oil and bound water.
- From the cooker, the cooked fish is fed to a twin-screw press, which separates most of the solid fish material from the liquid (water and oil) fraction of the cooked fish.
- The press water is sent to a set of centrifuges. These separate the remaining fish oil from the press water. The press water contains high levels of dissolved protein and minerals.
- The press water is pumped to a waste heat evaporator / concentration plant, where the valuable elements in the press water are recovered through evaporation of the excess water content. This process uses waste heat from the driers to evaporate off the excess water and produce a fish concentrate with 35 – 38% solid material content. The fish concentrate is added back to the press cake before drying.
- Process vapours and odour point suctions are treated by seawater washing and/or the RTO. Cooling sea water is taken up via a pipeline near the plant and continuously returned to the sea. Return water is approximately 10˚C warmer than intake water. The discharge water is not expected to contain any effluent or solids.
- The solids (press cake) is mixed with the fish concentrate and sent to the indirect steam

dryers, where the remaining water is evaporated and a stable, sterilised fishmeal product is produced.

- The dry fishmeal is then milled, treated with an antioxidant before weighed, bagged and stored in a warehouse for a curing period of at least two weeks.
- Fishmeal is then despatched to export markets in 50 kg bags in closed shipping containers.
- Fish oil is pumped from the centrifuges to a fish oil storage tank and later dispatched in tankers or drums in shipping containers.

4.5 SITE DESCRIPTION AND ATTRIBUTES

The property on which the Afro Fishing facility is proposed is a lease area on Quay 2 of Erf 12459, Mossel Bay that makes up the Port of Mossel Bay under the management of the Transnet National Ports Authority (TNPA). The port falls within the Port Limits for the Port of Mossel Bay as provided for in the National Ports Act, 2005 and gazetted on the 22nd January 2010.

The lease site is the site of the old I&J facility. This facility closed its doors at the end of October 2012.

Figure 1: Afro Fishing Expansion Area (Mossel Bay GIS Viewer, 2019)

4.6 PLANNING CONTEXT

The Port of Mossel Bay is a working harbour that supports commercial fishing industries. The expansion of the existing facility to accommodate fishmeal and fish oil from raw product is in line with the current land uses within the harbour, as well as the future development envisaged by TNPA. The TNPA, Afro Fishing and the Mossel Bay Municipality are currently in discussions regarding the various consent uses and how to apply them within the harbour.

The zoning of the subject property according to the Mossel Bay Integrated Zoning Scheme By-Law is

"*Transport Zone I: Transport Use*".

"*Transport Zone I: Transport Use*" has a secondary right, namely Industry (Industrial Zone II). The definition of an Industry is as follows: *"Industry" means a property used as a factory and in which an article or part of the article is made, manufactured, produced, built, assembled, compiled, printed, ornamented, processed, treated, adapted, repaired, renovated, rebuilt, altered, painted (including spray painting), polished, finished, cleaned, dyed, washed, broken up, disassembled, sorted, packed, chilled, frozen or stored in cold storage; including offices, caretaker's quarters, factory shop or other uses that are subservient and ancillary to the use of the property as a factory;"*

This definition does not include a noxious trade or risk activity. The air quality assessment (done by *Lethabo Air Quality Specialists (Pty) Ltd*), however, made recommendations so that odour generation can be reduced substantially by adhering to the recommendations in the report.

The proposal is therefore not a noxious trade and no split zoning is needed. The new section can be handled as a consent use only.

4.7 STATUS OF MARINE FISHERIES

The use of freshly harvested industrial fish is an important aspect for the production of fishmeal. It minimises the potential for odours as well as ensures that the protein content of the product is of a high quality. The fresher the fish the higher the protein content in the fish meal and subsequently the better the value of the end product. Afro Fishing intends sourcing the industrial pelagic fish for the fishmeal and oil reduction process.

The long-term sustainability of marine resources through responsible and collaborative management no doubt plays an essential role in the social and economic wellbeing of South Africa's coastal people. In the past, fisheries have been managed on the basis of a so-called single species approach to fisheries management, which only considered the species being harvested in the management with no consideration for any other effect the fishing activity had. Holistic environmental management strategies and more sustainable fishing practices are being employed to ensure present and future generations are able to meet their needs (WWF, 2011).

In contrast to the previous single species approach to fisheries management, the holistic approach - an Ecosystem Approach to Fisheries (EAF) - was adopted by the Department of Agriculture, Forestry & Fisheries (DAFF)[1]. An EAF takes into consideration that all marine organisms and processes are interconnected and that alterations in these processes are not easily recognised and difficult to restore once they are disrupted. An EAF aims to "balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries" (FAO 2003).

The percentage of over-exploited species in South African waters has decreased by 4% driven largely by an increase the number of species being assessed (with positive outcomes) by the Department of Agriculture, Forestry and Fisheries (DAFF) through its formal stock assessments (WWF, 2018).

[1] The DAFF is now part of the Department of Environment, Forestry & Fisheries (DEFF) however where documents were published prior to June 2019, references will be made to DAFF.

Table 3: Number and percentage of stocks considered of concern (DAFF, 2016)

	2012	2014	2016
Stocks not of concern	20 (46%)	22 (49%)	27 (52%)
Stocks of concern	23 (54%)	23 (51%)	25 (48%)
Number of stocks assessed per year	**43**	**45**	**52**

Off the coast of South Africa, small pelagic forage fish, consisting predominantly of anchovy *Engraulis encrasicolus*, sardine *Sardinops sagax* and redeye round herring *Etrumeus whiteheadi* generally account for more than 90% of the total pelagic purse-seine catch. Forage fish are usually found in the continental shelf waters between Hondeklip Bay on the West Coast and Durban on the East Coast. They generally exhibit schooling behaviour, have a small body size with rapid growth rates, have short lifespans and exhibit strong population responses to environmental variability, which results in large natural fluctuations in abundance over space and time. Long-term changes in the relative abundance of anchovy and sardine, over decadal and centennial time-scales, have been observed both locally and worldwide. These species alternations are generally associated with variability in the recruitment of both species, owing to changing environmental factors that affect, among others, transport of eggs and larvae and feeding conditions.

Pelagic fish resources are important to the country for several reasons. Firstly, the purse-seine fishery in which they are caught is South Africa's largest fishery (in terms of landed mass) and second only to the hake fishery in terms of value. Secondly, pelagic fish are an important and high-quality source of protein. Anchovy and round herring are mostly reduced to fish meal and oil in industrial-scale factories and used as a protein supplement in agri- or aqua-feeds. Sardine are mainly canned for human and pet consumption, with a small amount packed whole for bait or as cutlets for human consumption. Thirdly, the pelagic fishery employs a large workforce in fishing and related industries. (DAFF, 2016).

The South African government currently regards the fishing industry as a sector for employment expansion within the country. Given the state of many of South Africa's fisheries resources, in particular those found inshore, it is unlikely that job creation can take place in the short-term without progressive rebuilding strategies. There is the opportunity to increase the value of the products from fishing through increased quality control and value adding. (WWF, 2011)

Finally, pelagic fish occupy a key position in the marine foodweb where they are the link that transfers energy produced by plankton to large-bodied predatory fish, seabirds, and marine mammals. Because many animals and humans depend on forage fish, it is important to manage the fishery that targets them in a manner that accounts for their high degree of variability and importance to the ecosystem. This is so because of the potentially severe risks of local depletion of forage fish for dependent species such as seabirds, particularly in years of low fish abundance in certain areas. (DAFF, 2016)

Ongoing research on a number of issues that have an impact on the sustainable use and management of small pelagic fisheries off the coast of South Africa includes regular monitoring of pelagic fish abundance, development and revision of management procedures, and investigation into, among others, population structure, biology and ecology, catch patterns, distribution and behaviour of key species.

The biomass and distribution of anchovy and sardine, but also of other schooling pelagic and mesopelagic fish species such as round herring, juvenile horse mackerel and lantern and lightfish (*Lampanyctodes hectoris* and *Maurolicus walvisensis* respectively) are assessed biannually using

hydroacoustic surveys. These surveys, which have been conducted without interruption for the past 35 years, comprise a summer adult biomass survey and a winter recruit survey. Data for the estimation of a number of other key biological measurements needed as input into the OMP and information pertaining to the environment are also collected during these surveys. Given the fluctuating nature of the abundance of pelagic fish species, these surveys continue to provide estimates that are far more reliable than those that would have been obtained through mathematical estimation from commercial catch data only, and have enabled optimal use of these resources at times of high biomass while offering protection to them at low biomass levels. (DAFF, 2016).

These biomass surveys provide the necessary information for the DAFF to determine the Total Allowable Catch (TAC) for each year. Fishing licenses are only issued according to the TAC, and license holders may not exceed the volume allowed to them. Afro Fishing is one such company that is allocated a TAC annually for sardine for the cannery. The same system will be followed for the species required for the Afro Fishing fishmeal and fish oil facility.

Anchovy and red-eye are species that are abundant according to the surveys.

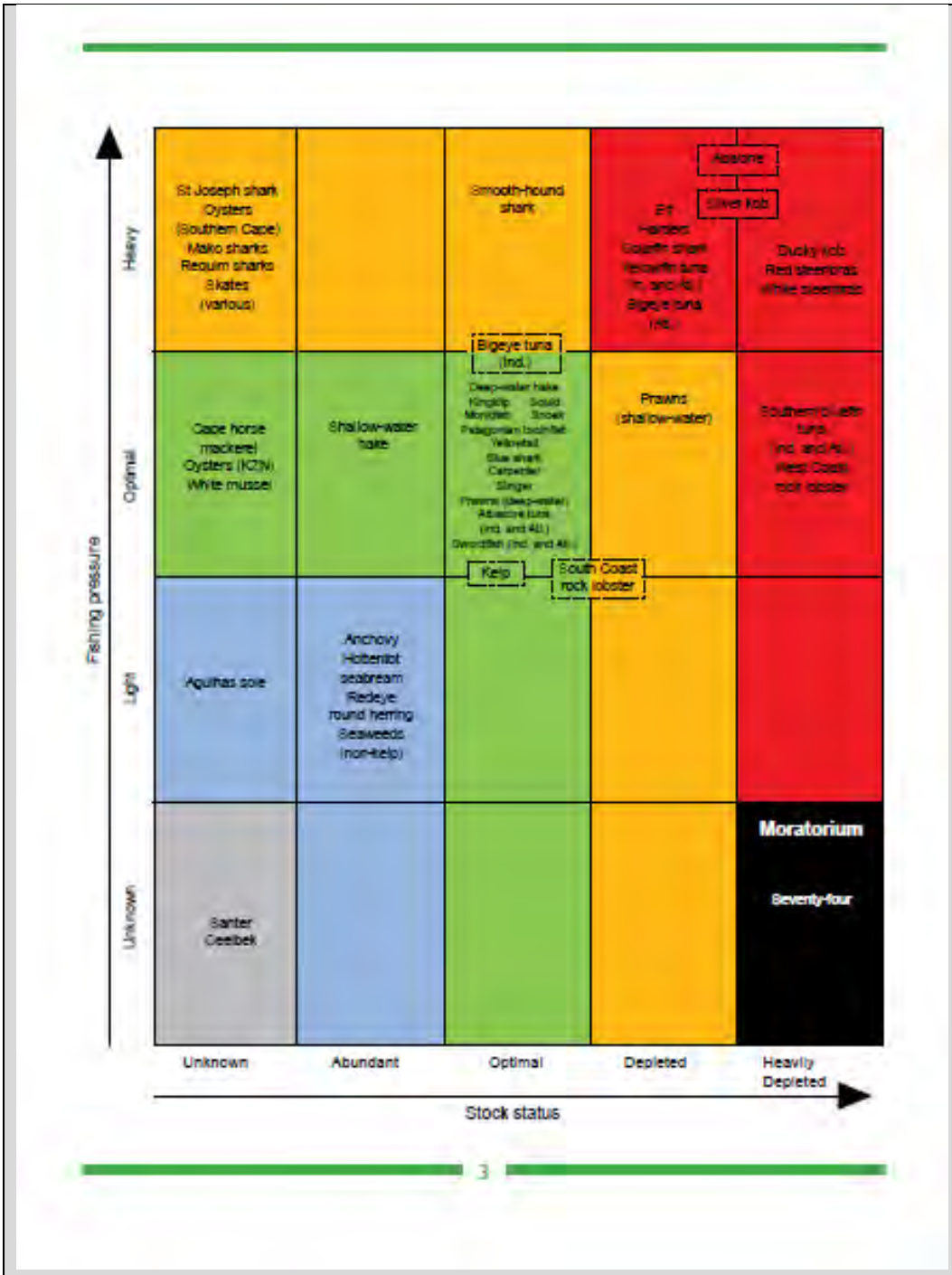

Figure 2: Stock Status (DAFF, 2016)

The primary approach that has been used to limit catches of forage fish is rights-based management with a specified annual Total Allowable Catch (TAC). Incorporation of ecosystem considerations and the development of ecosystem-based management is being undertaken through the revised Operational Management Procedure (OMP-14) and further development thereof (OMP-16). OMP-14 was simulation-tested to ensure an acceptable level of risk regarding the probability that sardine and anchovy abundances would drop below specified thresholds over a variety of harvest strategies. In adopting OMP-14, additional performance statistics related to several ecosystem objectives under different harvest strategies were also evaluated and an interim spatial component[2] aimed at balancing catches and available sardine biomass on a regional scale was agreed.

[2] Part of the Island Closure Feasibility Study, where areas within feeding radius of penguins are closed off for pelagic fishing.

OMP-14 was also tested using parameters denoting risk to the African penguin *Spheniscus demersus* population. Penguins were chosen as a key predator species for consideration because they feed predominantly on anchovy and sardine and because of their conservation status, which has been of recent concern due to appreciable reductions in numbers at the major breeding colonies on Robben and Dassen Islands over the last few years. As part of the implementation of an ecosystems approach to fisheries (EAF) in South Africa's fishery for small pelagic fish, a model of penguin dynamics has been developed for use in conjunction with the small pelagic fish OMP so that the impact on penguins of predicted future pelagic fish trajectories under alternative harvest strategies could be evaluated.

In 2017, the sardine quota was drastically reduced, prompting Afro Fishing to import sardine cutlets from Morocco. This ensured that the cannery remained operational, securing employment and ensuring the provision of canned fish to government school feeding schemes and other Afro Fishing canned pilchard markets. The import of sardines will be retained as part of the cannery's business model, along with obtaining sardines from local water as per their allocated TAC.

It was shown by the World Bank in 2009 that rising food prices had direct impacts on fisheries. On such impact was the redirection of forage fisheries (fish meal) catches to higher-value human food products (WWF, 2011). In this instance, the production of a high quality fishmeal product for export aqua-feed and fish oil for human consumption.

4.8 FISHMEAL SPECIES

The fish species required for fishmeal and fish oil for the facility are redeye round herring and anchovy, the so called "industrial" fish or forage fish.

Stock status	**Unknown**	**Abundant** Anchovy Sardine	**Optimal**	**Depleted** Sardine	**Heavily depleted**
Fishing pressure	**Unknown**	**Light** Anchovy Redeye round herring	**Optimal** Sardine	**Heavy**	

Figure 3: Pelagic Stock Status (DAFF, 2016)

In the 2013 biomass surveys, spawner biomass for Anchovy was estimated at around 5.17 million tonnes, substantially higher than that estimated in recent years and the highest estimate since 2001 (Mhlongo et al., 2013). The bulk of the anchovy spawner biomass continues to be found to the east of Cape Agulhas, with a small proportion of the total biomass (30%) in the area to the west of Cape Agulhas. This suggests that the reported eastward shift of the anchovy biomass and the mechanisms for maintaining the shifts are still present (Mhlongo et al., 2013). This decreased in 2018 but the distribution remained similar to that in 2013, albeit with a distinctive shift eastwards.

The implications for Afro Fishing are that the biomass of industrial fish species is closer to the southern cape coast which means that the catch can be offloaded on site within a far shorter period, ensuring its freshness and quality for fishmeal and oil.

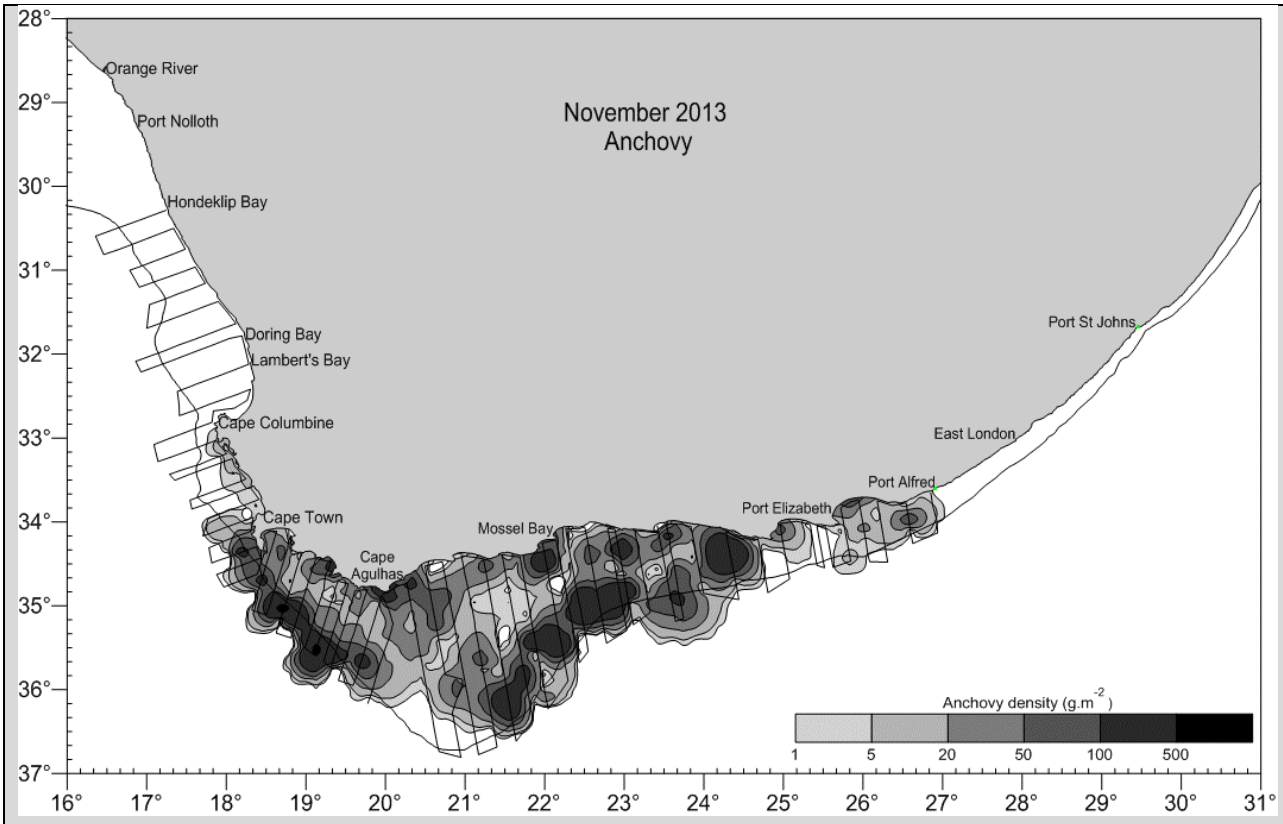

Figure 4: South African anchovy *E. encrasicolus* distribution and relative density for the 2013 spawner biomass survey (Mhlongo et al., 2013)

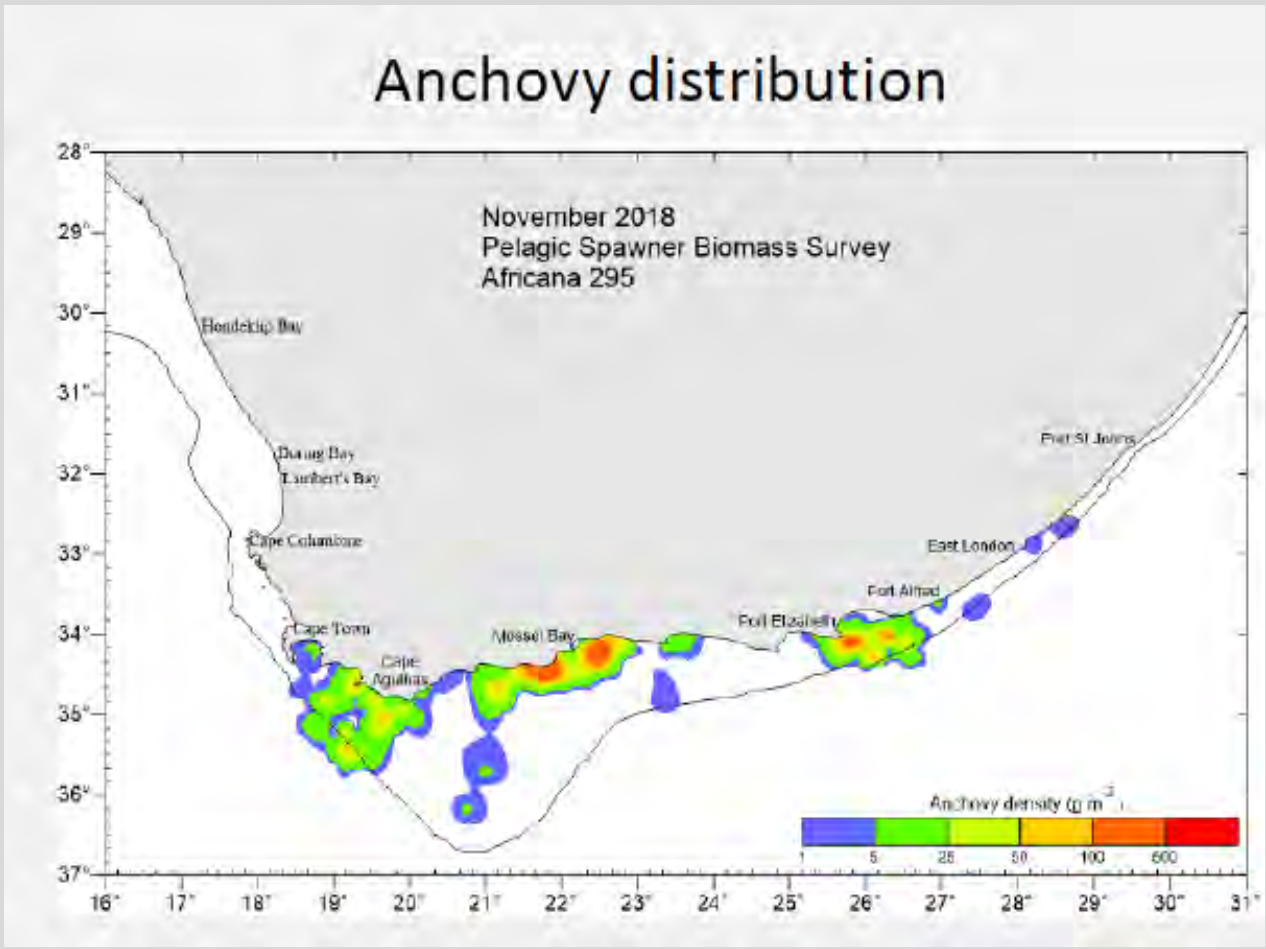

Figure 5: South African anchovy *E. encrasicolus* distribution and relative density for the 2018 spawner biomass survey

(DAFF., 2018)

Red-eye (Round Herring) is considered underexploited and has a Precautionary Upper Catch Limit (PUCL) of 100 000t which has never been caught. Oceana Fishing Group (Lucky Star) has in the past tried innovative fishing methods to target this species which is found in deeper water than sardine and anchovy. Red-eye behaviour also differs from that of sardine and typically they are not easily caught with traditional sardine or anchovy-directed purse seine nets. The 2014 Lucky Star initiative was in the form of a specialised experimental permit granted by DAFF using mid-water trawl vessels which have the power and gear to target the deeper, faster-swimming red-eye. Catching them is only the first step however, processing follows which again will require innovation to ensure best utilisation is made of this resources potential (Japp, 2014).

Spawner biomass survey estimates (November 2013) for redeye were 1 286 473 t. This represents a considerable increase from the 2011 estimate and is slightly higher than the long-term (1984-2012) average of 952 000 t (Mhlongo et al., 2013). The red eye biomass was distributed widely over most parts of the 2013 survey area, but mostly concentrated over the central Agulhas Bank. The 2013 survey also revealed an unusual "gap" in red eye biomass distribution between Cape Point and Danger Point.

The 2018 survey remains similar in density and distribution.

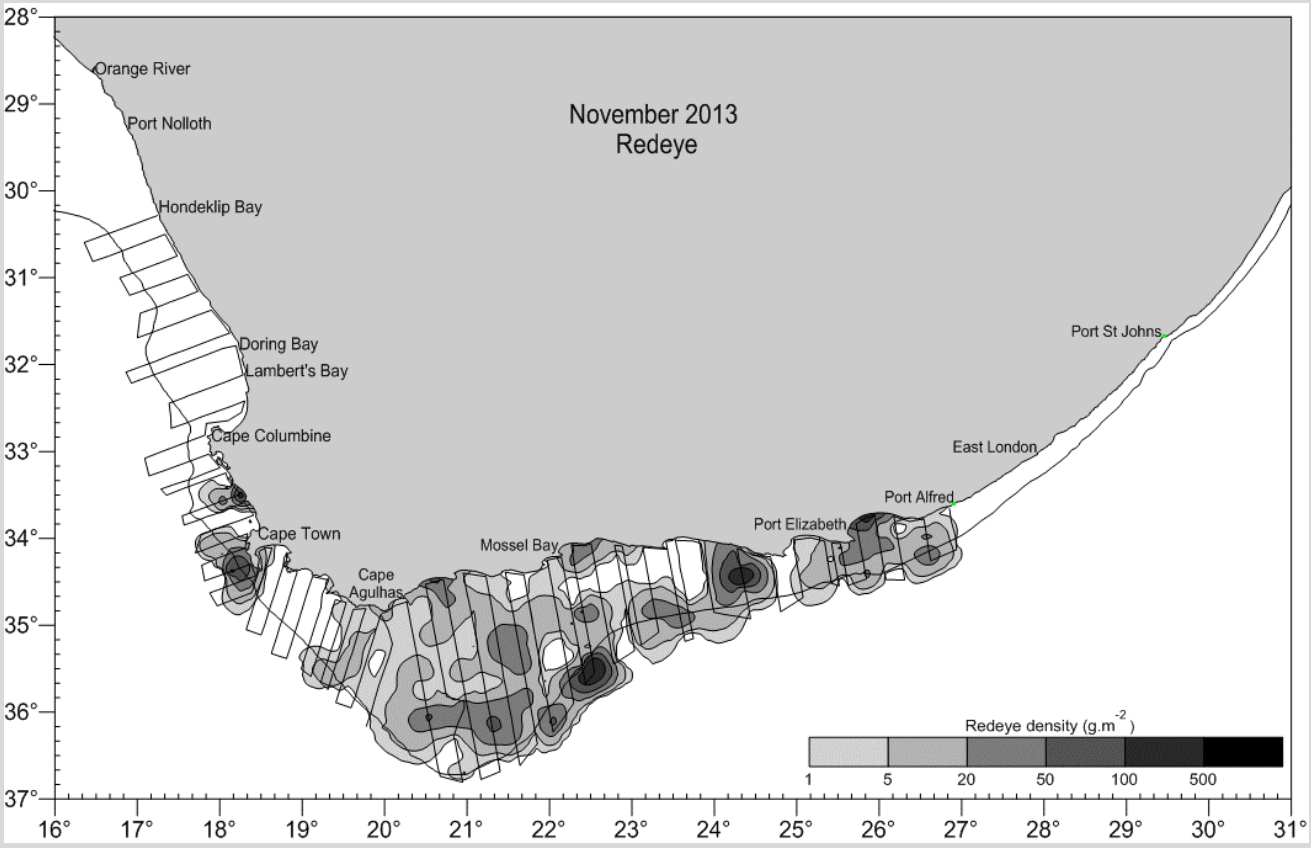

Figure 6: South African red-eye *E. whiteheadi* distribution and relative density for the 2013 spawner biomass survey (Mhlongo et al., 2013)

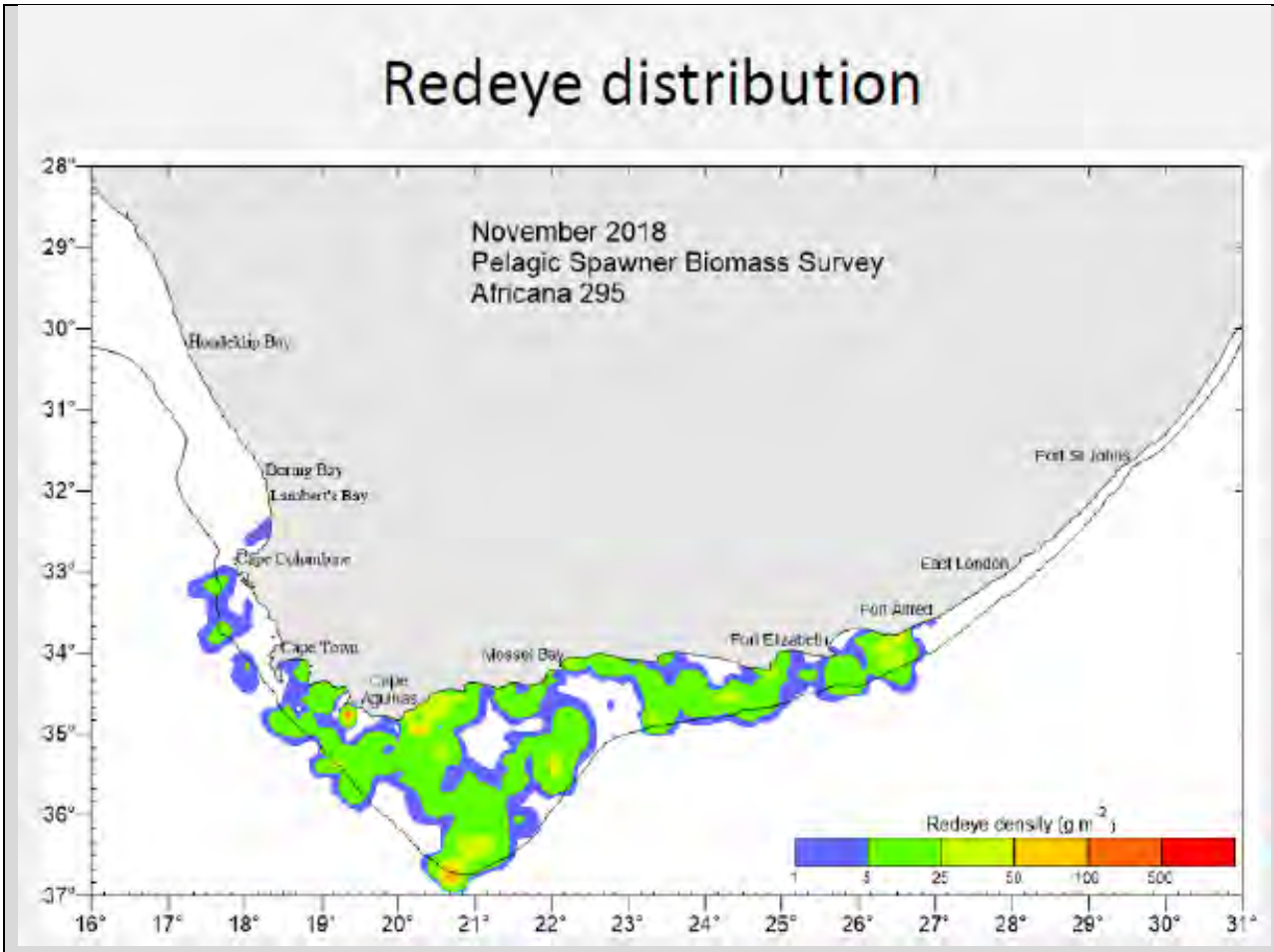

Figure 7: South African red-eye *E. whiteheadi* distribution and relative density for the 2018 spawner biomass survey (DAFF 2018)

4.9 FISHMEAL PROCESS

The South African fishing industry converts pelagic fish unsuitable for human consumption into animal feed with high nutritional value. Five factories along the west and southeast coasts of South Africa produce fish meal and fish oil.

Company	No. of facilities	Locations
Oceana	2	Laaiplek, St Helena Bay
Pioneer	1	St Helena Bay
Saldanha Fishing	1	St Helena Bay
Gansbaai Marine	1	Gansbaai

Fishermen, acting independently from factory managers, catch the fish at night and bring it ashore the next morning for processing. Afro Fishing will follow a similar approach in obtaining fish, but the technology used to process the fishmeal will be significantly different to that currently used in South Africa, notably the use of Re-generative Thermal Oxidation (RTO).

Fishmeal carries large quantities of energy per unit weight and is an excellent source of protein, lipids (oils), minerals, and vitamins; there is very little carbohydrate in fishmeal. Fishmeal is a generic term for a nutrient-rich feed ingredient used primarily in diets for agri- and aqua-feed, sometimes used as a high-quality organic fertilizer. Fishmeal can be made from almost any type of seafood but is generally manufactured from wild-caught, small marine fish that contain a high percentage of bones and oil, and usually deemed not suitable for direct human consumption. These fishes are considered 'industrial' since most of them are caught for the sole purpose of fishmeal and fish oil

production. A small percentage of fishmeal is rendered from the by-catch of other fisheries, and by-products or trimmings created during processing (e.g., fish filleting and cannery operations) of various seafood products destined for direct human consumption.

High-quality fishmeal normally contains between 60% and 72% crude protein by weight. From a nutritional standpoint, fishmeal is the preferred animal protein supplement in the diets of farm animals and often the major source of protein in diets for fish and shrimp. Typical diets for fish may contain from 32% to 45% total protein by weight, and diets for shrimp may contain 25% to 42% total protein. The percentages of inclusion rate of fishmeal in diets for carp and tilapia may be from 5-7%, and up to 40% to 55% in trout, salmon, and some marine fishes. A typical inclusion rate of fishmeal in terrestrial livestock diets is usually 5% or less on a dry matter basis.

The feed conversion ratio (FCR) is a measure of feed efficiency that is used for all livestock production. In this case FCR represents the number of units of 'dry' aquafeed required to produce a unit of 'wet' fish or crustacean. Several studies have shown that species produced through aquaculture are more efficient converters of feed into animal tissue than poultry, pigs and cows. Åsgård and Austreng (1995) noted that while approximately 30 percent of feed protein, fat and energy is retained in the edible part of salmon, only 18, 13, and 2 percent is retained in the edible part of chicken, pigs, and sheep, respectively.

Afro Fishing intends exporting their fishmeal, predominantly to countries requiring a high value product for aqua-feeds.

4.10 REGENERATIVE THERMAL OXIDISER (RTO)

The Regenerative Thermal Oxidiser (RTO) technology proposed for the Afro Fishing fishmeal facility is the single most important aspect of the proposal that will set the facility apart from any other fishmeal currently in operation in South Africa.

Natural decomposition of fish species results in the formation of trimethylamine (TMA) and hydrogen sulphide (H_2S), both of which are odours. According to the USA's Environmental Protection Agency (USEPA), approximately 20 to 30 times more TMA is generated than H_2S. TMA is the molecule that causes the very distinct fishy smell and is the main cause of odour complaints associated with traditional fishmeal facilities. The rate of generation of TMA within the first 12 hours is negligible and then increases exponentially as a function of temperature and will still be extremely low at the planned delivery temperature of 4 – 8 ºC.

There is no data to suggest that TMA is harmful to human health, although it only needs small amounts to cause a nuisance. The management of TMA emissions are thus crucial to the success of the proposal and this is where the use of RTO sets the it apart.

An RTO system is the collector point for all airflow inside the factory. The air from potential odours sources is collected and ducted throughout the building to the RTO. The RTO destroys Volatile Organic Compounds (VOCs) and odorous emissions by converting them into CO_2 (carbon dioxide) and H_2O (water). The process is carried out inside towers filled with ceramic material in which the pollutants are oxidized at ±850ºC.

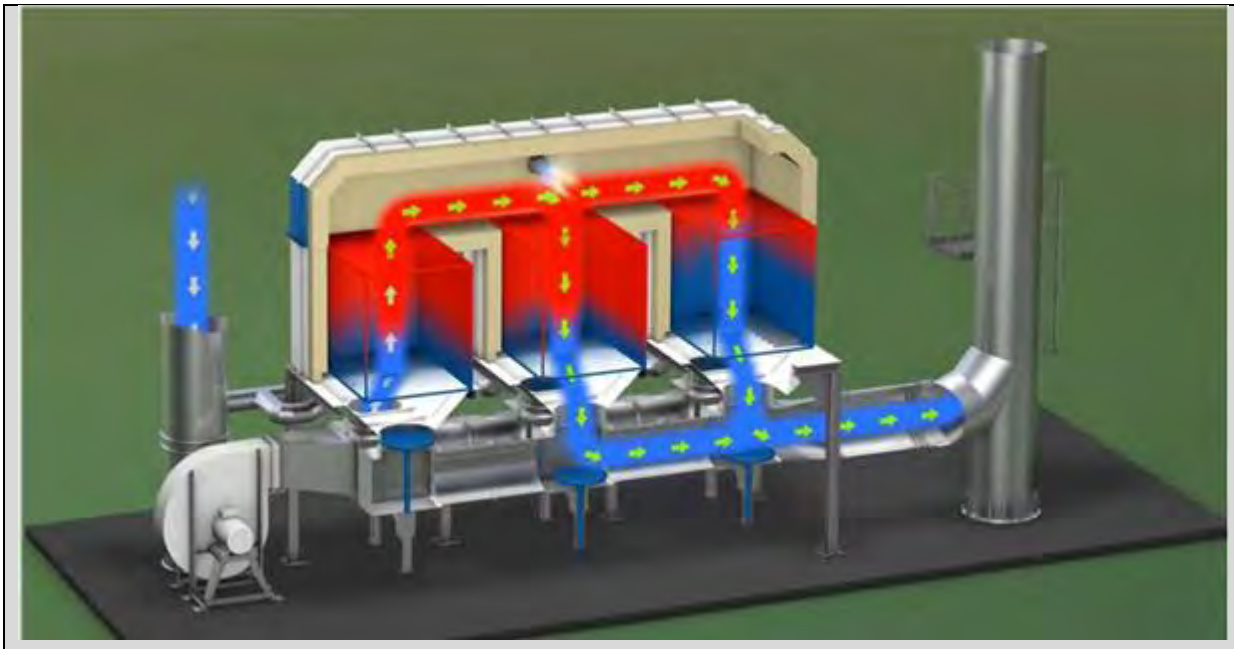

Figure 8: Typical RTO cross section (LAQS, 2019)

High energy efficiency, around 95%, is achieved by recovering and reusing the excess heat energy which is created in the process of combusting the organic materials contained in the air stream. It is possible to obtain destruction efficiency in excess of 99% in some cases. Sampling at the Tahivilla facility in Spain indicates an efficiency of 99.7%.

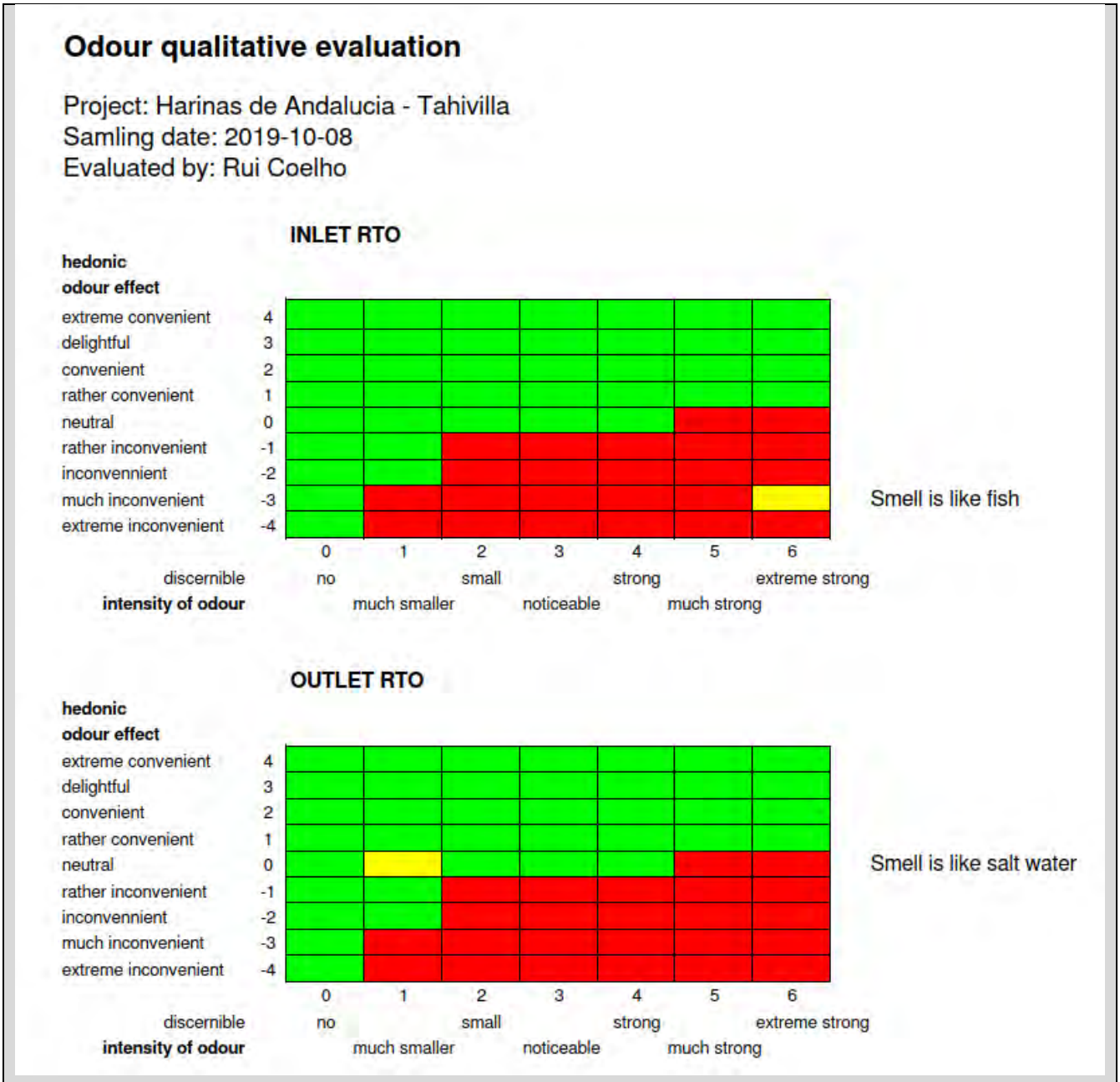

Figure 9: RTO efficiency (Tahivilla, 2019)

4.11 PROCESS TO DATE

CHRONOLOGY OF EVENTS			
DATE	PURPOSE	ENTITY	ACTIONS
22/02/2019	Background Information Document (BID)	Cape EAPrac	A BID and draft Air Quality Impact Assessment was made available to the public and authorities for initial comment and review for a 30 day period.
22/02/2019	Advertisements	Cape EAPrac	Advertisements in two newspapers were published calling for I&AP registration and

			the availability of the BID.
22/02/2019	Written notices	Cape EAPrac	Written notifications were provided to all properties outside of the TNPA property on which the proposal is sited.
22/02/2019	I&AP Database	Cape EAPrac	An ongoing I&AP Register is being maintained.
22/02/2019 – present	Specialist investigations	Various	Various specialist studies have been ongoing to inform the Basic Assessment Report.
26/05 – 31/05/2019	Task Team investigation of existing RTOs	Task Team	Site visits to Peniche (Portugal) and Tahivilla (Spain) to assess existing RTO at fishmeal plants.
19/06/2019	Pre-Application Authority Meeting	Cape EAPrac	Pre-Application meeting with DEA&DP and GRDM.
02/08/2019	Application Form	Cape EAPrac	Submit Application Form V2 for Environmental Authorisation to DEADP.
29/08/2019	Authority Meeting	Cape EAPrac	Authority meeting with DEA&DP and GRDM to discuss the process and timeframes.
10/09/2019	Withdraw Application	Cape EAPrac	Application withdrawn due to a delay in the air sampling and report expected from Europe to inform the Air Quality Impact Assessment Report.
23/10/2019	Application Form V2	Cape EAPrac	Submit Application Form V2 for Environmental Authorisation to DEADP.
08/11/2019	Advertisements	Cape EAPrac	Advertisements in two newspapers were published calling for I&AP registration and the availability of the DBAR.
12/11/20119	Draft Basic Assessment Report	Cape EAPrac	DBAR made available to all registered I&APs and stakeholders for a comment and review period of 30 days.
Pending	Final Basic Assessment Report	Cape EAPrac	Update DBAR and submit final report to the competent

			authorities for decision making.

4.12 CONCLUSION

Cape Environmental Assessment Practitioners (Cape EAPrac) has been appointed as the independent Environmental Assessment Practitioner (EAP) to facilitate the legally required Environmental Application Process in terms of the National Environmental Management Act (NEMA, Act No 107 of 1998 as amended), the 2014 Environmental Impact Assessment (EIA) Regulations & the National Environmental Management: Air Quality Act (NEM:AQA, Act 39 of 2004), for the proposed development of a fish meal and fish oil reduction facility on the old I&J properties on Quay 2 of the Port of Mossel Bay on behalf of the Applicant, Afro Fishing (Pty) Ltd.

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is proposed on the current footprint of the old I&J facility, with a new canning store adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The following specialist assessments and reports were undertaken as part of the Environmental Impact Assessment process:

- Air Quality Impact Assessment by Lethabo Air Quality Specialists (LAQS);
- Socio-Economic Impact Assessment by Multi Purpose Business Solutions (MPBS);
- Traffic Impact Assessment by Urban Engineering;
- Planning Statement by DelPlan;
- Electrical Supply Report by Makukhane Consulting Engineers;
- Services Report by V3 Engineering;
- Visual Statement by Francois van Zyl Architects; and
- Heritage Notice of Intent to Develop by Perception Planning.

According to the various specialists, the impacts associated with the proposed redevelopment of the site range between negligible and medium significance, with mitigation. The impacts can be easily managed to ensure that they do not cause significant negative impacts to the environment or the community.

The critical mitigation for odour is the implementation of the RTO for the fishmeal processing, along with the use of fresh fish, correct extraction and ducting; ongoing monitoring and maintenance of equipment and the use of trained personnel to oversee the plant.

SECTION A: PROJECT INFORMATION

5. ACTIVITY LOCATION

Location of all proposed sites:	The proposed site is the old I&J facility on Quay 2 located immediately adjacent to the existing Afro Fishing cannery on Quay 1 of the Port of Mossel Bay.
Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site:	Portion of Erf 12459, Port of Mossel Bay, Mossel Bay
Property size(s) in m² for each proposed site:	111 463.1m² (11.146ha)
Development footprint size(s) in m²:	±12 500m² (1.25ha)
Surveyor General (SG) 21 digit code for each proposed site:	C05100070001245900000

6. PROJECT DESCRIPTION

(a) Is the project a new development? If "NO", explain:

~~YES~~	NO

The project is not a "new development" in that it is not utilising untransformed or undisturbed land. The project is the redevelopment of the existing buildings previously leased to I&J to develop a fishmeal and fish oil reduction facility on the same site. The redevelopment will entail the demolition of the current buildings and the rebuilding of a fishmeal and fish oil reduction facility that is custom built for its requirements. This includes correct and well designed ducting systems to manage air quality, creation of negative pressure inside the building to further facilitate the management of air quality and implementation of mechanisms to improve energy consumption on the site.

(b) Provide a detailed description of the scope of the proposed development (project).

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is proposed on the current footprint of the old I&J facility, with a new warehouse adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The expansion project will include the following:

1. Fish meal and oil reduction plant
2. Fish freezing plant
3. Cold store
4. Fish meal warehouse
5. New canned product warehouse

The reduction process will include the following unit operations:

-- Cooking

-- Pressing

-- Liquid-solid separation

-- Indirect steam drying

-- Waste heat evaporation

-- Oil-liquid separation

-- Cooling / grinding / bagging

-- Boilers for steam generation.

The plant will have a capacity to process a maximum of ±1 000 tons of raw fish per day. The proposed project will produce fish meal and fish oil products for export markets. The project will positively impact local service providers, the Mossel Bay economy, SMME's and ancillary industries. In terms of employment opportunities, the expansion will increase direct employment from 341 to approximately 560 persons.

Afro Fishing (Pty) Ltd envisages an investment of R350-400m in this project. The investment will diversify Afro Fishing into other fisheries, namely anchovy, sardinella and red-eye herring. The project will increase the canned fish production of which a large percentage of the canned fish production goes into the National Schools Nutrition Programme where Afro Fishing supplies 'affordable protein' for school feeding.

The design of the plant, especially the use of RTO (re-generative thermal oxidation) is based on a similar facility, Narciso Dias & Filhos, LDA, located in Peniche, Portugal. The reason for this is due to the similarity in location (seaside town) with tourism as a main driver for the economy. The use of RTO in the plant led to significantly improved odour control management and eliminated offensive odour problems previously experienced. The RTO destroys Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs) and odorous emissions that are often discharged from industrial or manufacturing processes.

The RTO represents the Best Available Technology (BAT) currently available in the world for odour management. There are currently no such plants in South Africa in the fishing / fishmeal industry.

Plant Operation and Management

Offloading of fish

Depending on the size and capacity of the fishing vessel, approximately two to four vessels are expected to dock at the plant's jetty per day during the peak fishing season. Once the vessel has docked, fish will be pumped off the vessel using a wet offloading pneumatic suction system. The fish is conveyed through closed pipelines to a set of industrial batch scales and weighed. The fish is then pumped or conveyed into stainless steel tanks to limit the impact of high ambient temperatures.

Water pumped off the vessel will be removed from the fish using dewatering screens. The cold water will be recycled and returned to the fishing vessel. Once the vessel is offloaded this water will either be treated by the factory or returned to the fishing vessel for dumping at sea.

The plant and its management are responsible for the vessel and carry liability for any pollution emanating from the vessel while it is docked at the jetty of the fishmeal plant. Once in the bay, responsibility and liability for the vessels transfers to the owner of the boat.

Fish processing

The fish processing sequence is as follows:

- From the stainless-steel storage tank, the fish mass is pumped or conveyed to the cookers. The cooker screw that transports the fish through the cooker is powered by an electric motor. The fish is cooked using steam generated by LSO-fired boilers. Cooking coagulates the protein, ruptures the fat deposits and liberates oil and bound water.
- From the cooker, the cooked fish is fed to a twin-screw press, which separates most of the solid fish material from the liquid (water and oil) fraction of the cooked fish.
- The press water is sent to a set of centrifuges. These separate the remaining fish oil from the press water. The press water contains high levels of dissolved protein and minerals.
- The press water is pumped to a waste heat evaporator / concentration plant, where the valuable elements in the press water are recovered through evaporation of the excess water content. This process uses waste heat from the driers to evaporate off the excess water and produce a fish concentrate with 35 – 38% solid material content. The fish concentrate is added back to the press cake before drying.
- Process vapours and odour point suctions are treated by seawater washing and/or the RTO. Cooling sea water is taken up via a pipeline near the plant and continuously returned to the sea. Return water is approximately 10˚C warmer than intake water. The discharge water is not expected to contain any effluent or solids.
- The solids (press cake) is mixed with the fish concentrate and sent to the indirect steam dryers, where the remaining water is evaporated and a stable, sterilised fishmeal product is produced.
- The dry fishmeal is then milled, treated with an antioxidant before weighed, bagged and stored in a warehouse for a curing period of at least two weeks.
- Fishmeal is then despatched to export markets in 50 kg bags in closed shipping containers.
- Fish oil is pumped from the centrifuges to a fish oil storage tank and later dispatched in tankers or drums in shipping containers.

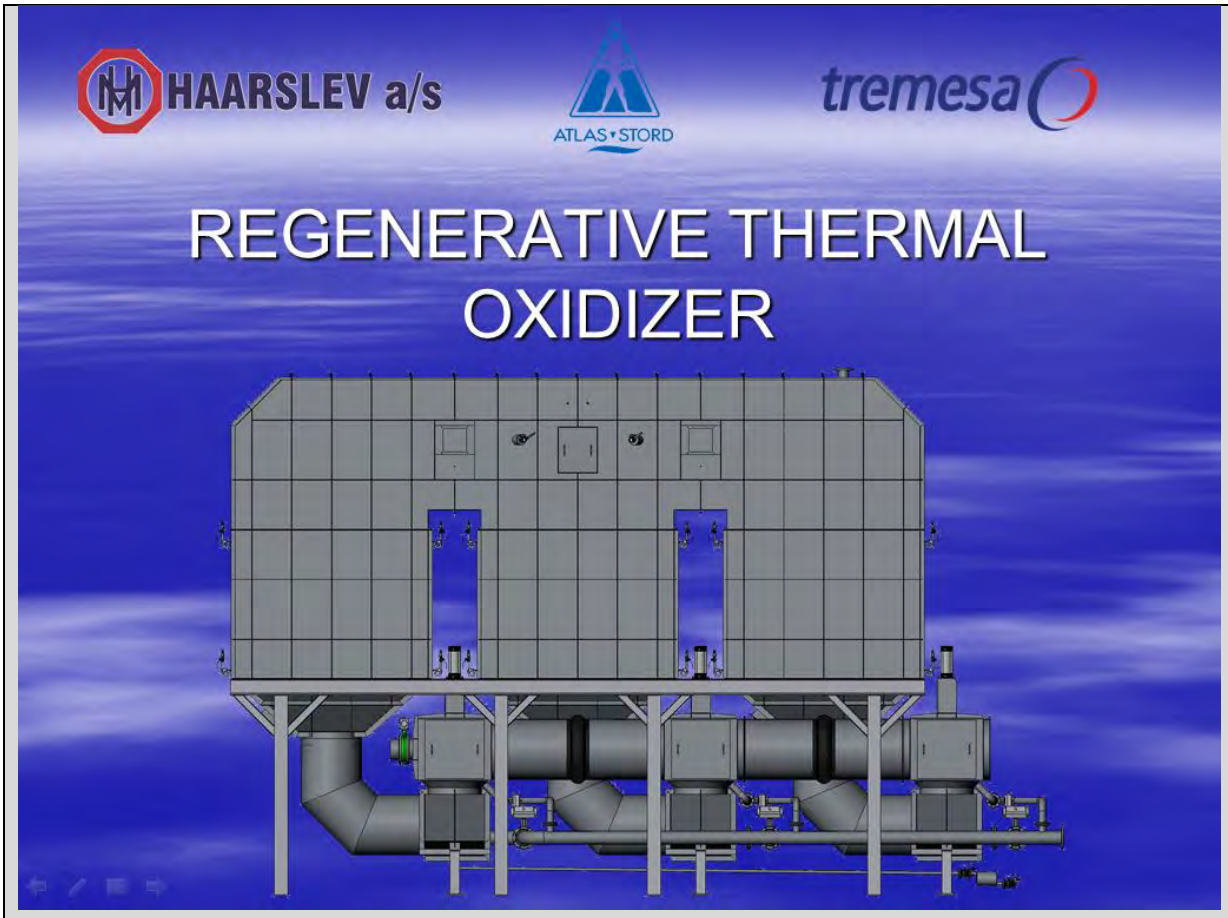

Figure 10: Regenerative Thermal Oxidiser (Haarslev, 2019)

Figure 11: Regenerative Thermal Oxidiser (Tremesa, 2019)

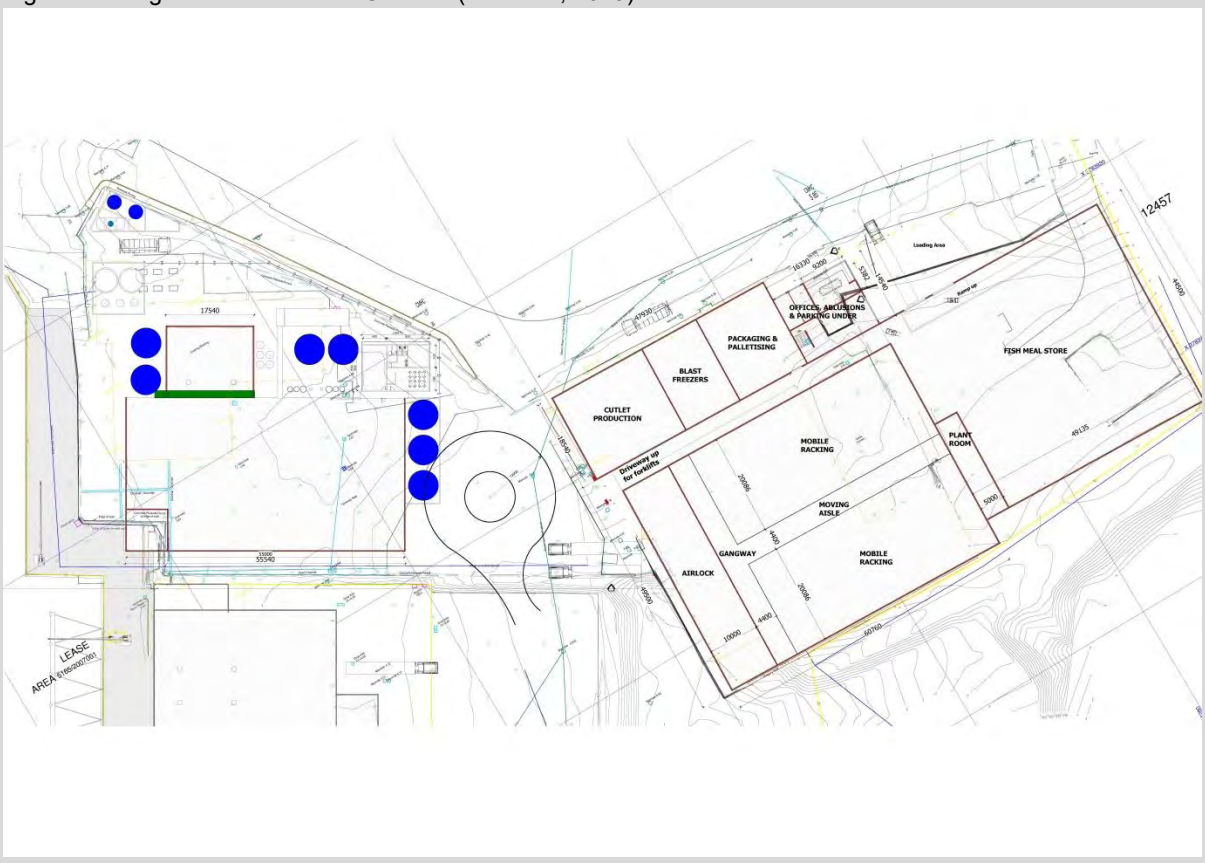

Figure 12: Proposed expansion layout

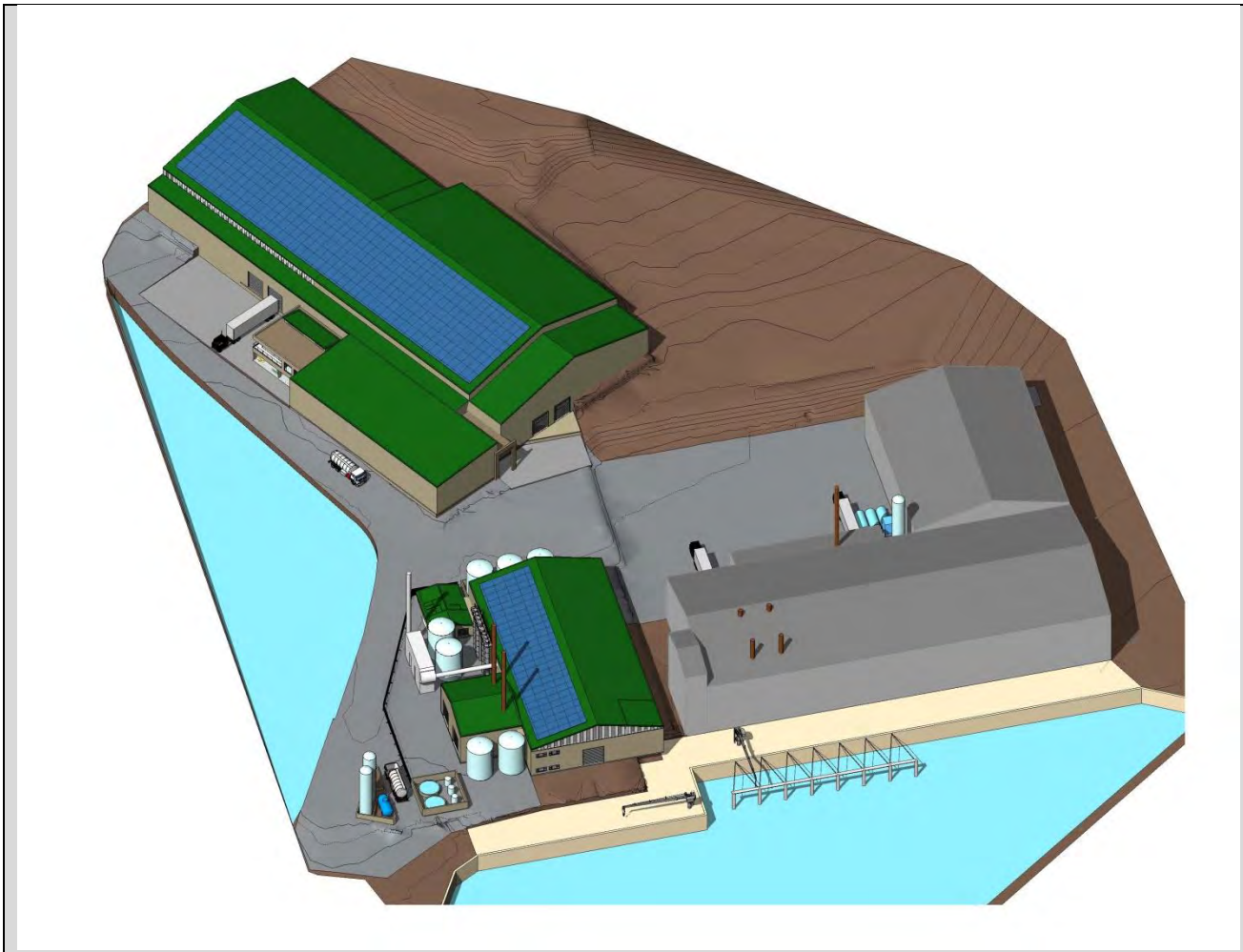

Figure 13: 3D Model of the existing facility and proposed expansion

Please note: This description must relate to the listed and specified activities in paragraph (d) below.
(c) Please indicate the following periods that are recommended for inclusion in the environmental authorisation:

(i)	*the period within which commencement must occur,*	Three years to accommodate planning applications
(ii)	*the period for which the environmental authorisation should be granted and the date by which the activity must have been concluded, where the environmental authorisation does not include operational aspects;*	Three years
(iii)	*the period that should be granted for the non-operational aspects of the environmental authorisation; and*	None
(iv)	*the period that should be granted for the operational aspects of the environmental authorisation.*	The facility will operate permanently. Therefore no time limit should be placed on the operational aspects of the activity. Any AEL issued for the facility will require renewal every 5 years.

Please note: The Department must specify the abovementioned periods, where applicable, in an environmental authorisation. In terms of the period within which commencement must occur, the period must not exceed 10 years and must not be extended beyond such 10 year period, unless the process to amend the environmental authorisation contemplated in regulation 32 is followed.

(d) List all the listed activities triggered and being applied for.

Please note: The onus is on the applicant to ensure that all the applicable listed activities are applied for and assessed as part of the EIA process. Please refer to paragraph (b) above.

EIA Regulations Listing Notices 1 and 3 of 2014 (as amended):

Listed Activity No(s):	*Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 1 (GN No. R. 327)*	*Describe the portion of the development that relates to the applicable listed activity as per the project description.*	*Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational.*
34	The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution.	The processing of fresh industrial fish to produce fishmeal intended for animal consumption triggers Category 10 of R893 of the NEM:AQA dated 22 November 2013. The increased volume of water to be discharged with the current effluent authorised in terms of the NEM:ICMA Coastal Waters Discharge Permit will require an amendment to the existing permit	Development and operation.
~~*Listed Activity No(s):*~~	~~*Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 3 (GN No. R. 324)*~~	~~*Describe the portion of the development that relates to the applicable listed activity as per the project description.*~~	~~*Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational.*~~

Waste management activities in terms of the NEM: WA (GN No. 921):

~~*Category A Listed Activity No(s):*~~	~~*Describe the relevant Category A waste management activity in writing as per GN No. 921*~~	~~*Describe the portion of the development that relates to the applicable listed activity as per the project description*~~

Note: If any waste management activities are applicable, the Listed Waste Management Activities Additional Information Annexure must be completed and attached to this Basic Assessment Report as Appendix I.

Atmospheric emission activities in terms of the NEM: AQA (GN No. 893):

Listed Activity No(s):	*Describe the relevant atmospheric emission activity in writing as per GN No. 893*	*Describe the portion of the development that relates to the applicable listed activity as per the project description.*
10	Processes for the rendering cooking, drying, dehydrating, digesting, evaporating or protein concentrating of any animal matter not intended for human consumption. All installations handling more than 1 ton of raw materials per day.	The fishmeal facility will produce animal protein for animal consumption and will have a design capacity of ±1 000 tons of raw fish per day. Since the fish oil will be produced for human consumption it does not fall into this category.

(e) Provide details of all components (including associated structures and infrastructure) of the proposed development and attach diagrams (e.g., architectural drawings or perspectives, engineering drawings, process flowcharts, etc.).

Buildings *Provide brief description below:*	~~YES~~	~~NO~~

The site contains the existing processing, packing, freezing, storage and office buildings that were previously leased by I&J. The company closed its doors at the end of October 2012 with two years remaining on the lease. The buildings have since been standing neglected and unmaintained.

The yellow polygon on the image below shows the existing buildings and hard surfaced areas on which the redevelopment is proposed.

Figure 14: Existing buildings on site (Mossel Bay GIS Viewer, 2019)

Photo 1: Existing I&J buildings on the west

Photo 2: Existing buildings on eastern side

The redevelopment will entail the demolition of the existing buildings and the construction of a new

facility on the existing footprint. This is to ensure that the required environmental controls associated with the proposed technology are appropriate and to specification.

The new buildings will consist of a receiving area for fresh fish, process areas for the following:

-- Cooking

-- Pressing

-- Liquid-solid separation

-- Indirect steam drying

-- Waste heat evaporation

-- Oil-liquid separation

-- Cooling / grinding / bagging

-- Boilers for steam generation.

In addition, the proposal includes offices, warehousing, cold store and freezing facilities.

Figure 15: Spatial Development Plan

Figure 16: Proposed Site Layout

Infrastructure (e.g., roads, power and water supply/ storage) *Provide brief description below:*	*YES*	~~*NO*~~

The existing cannery has access from Bland Street only. The redevelopment proposal includes access from the current lease area to the new lease area (old I&J site).

Figure 17: Current access (Urban Engineering, 2019)

Part of the lease agreement between Afro Fishing and Transnet National Ports Authority, included a provision that a gate could be installed between the existing Afro Fishing cannery site and the proposed Fish Meal and Oil Reduction facility. This gate will help to increase circulation between the two facilities, will help distribute traffic to and from the facilities as access will be possible via Portnet gates 2 and 3 and will provide an emergency exit. Currently Afro Fishing only uses Portnet gate no 2. In other words, vehicles will have the option to either access the site via Bland Street or via Kloof street.

Figure 18: Proposed access routes (Urban Engineering, 2019)

Processing activities (e.g., manufacturing, storage, distribution) *Provide brief description below:*	*YES*	~~*NO*~~

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is proposed on the current footprint of the old I&J facility, with a new warehouse adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The expansion project will include the following:

1. Fish meal and oil reduction plant
2. Fish freezing plant
3. Cold store
4. Fish meal warehouse
5. New canned product warehouse

The reduction process will include the following unit operations:

-- Cooking

-- Pressing

-- Liquid-solid separation

-- Indirect steam drying

-- Waste heat evaporation

-- Oil-liquid separation

-- Cooling / grinding / bagging

-- Boilers for steam generation.

The plant will have a capacity to process a maximum of ±1 000 tons of raw fish per day. The proposed project will produce fish meal and fish oil products for export markets.

Storage facilities for raw materials and products (e.g., volume and substances to be stored) *Provide brief description below:*	*YES*	~~*NO*~~

The eastern buildings will comprise of a freezing facility, cold store, warehouse and office operations. These facilities will be phased in from year 2 of the project onwards.

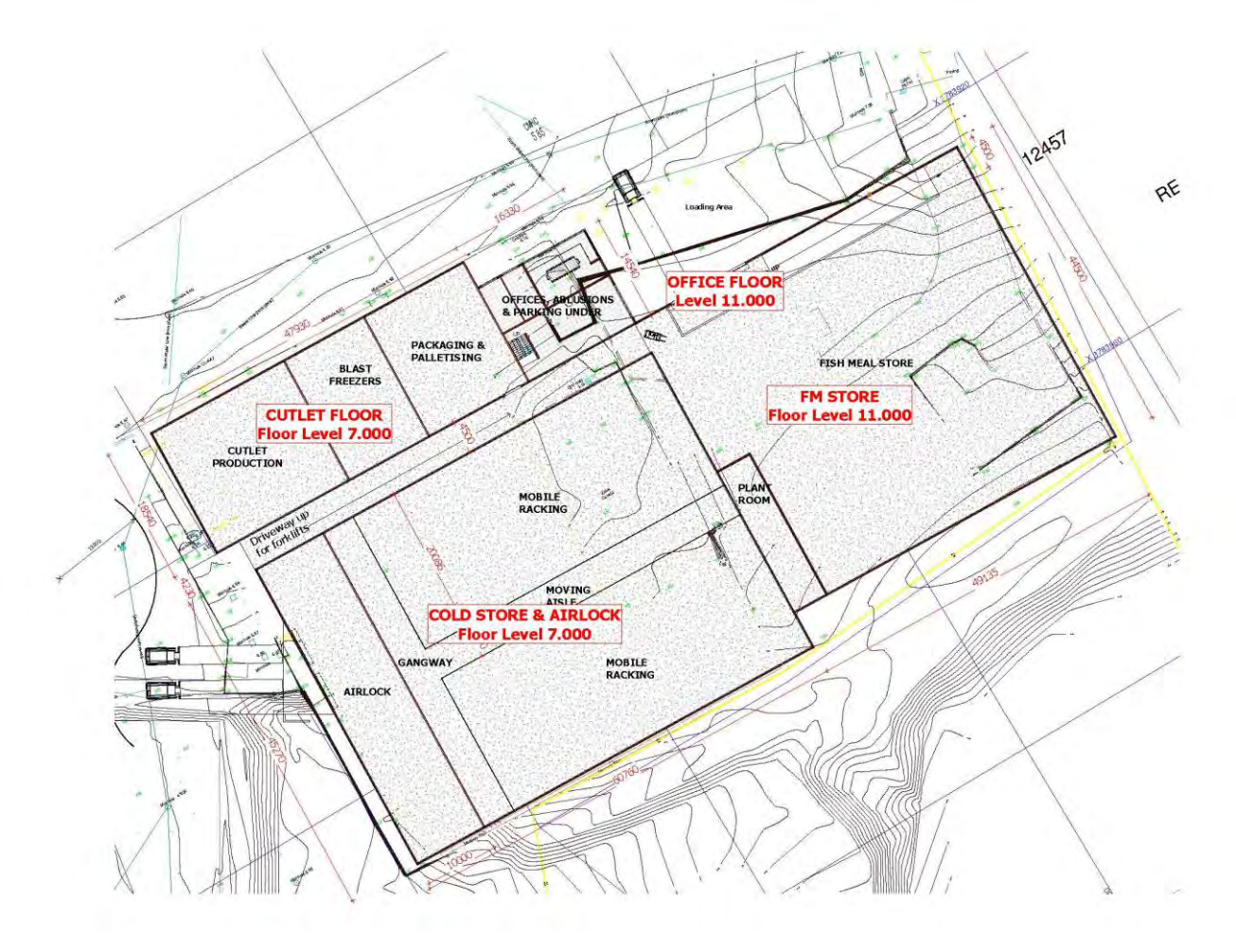

Figure 19: Eastern building unit processes

Storage and treatment facilities for effluent, wastewater or sewage: *Provide brief description below:*	~~*YES*~~	*NO*
Storage and treatment of solid waste *Provide brief description below:*	~~*YES*~~	*NO*
Facilities associated with the release of emissions or pollution. *Provide brief description below:*	*YES*	~~*NO*~~

Air Quality Emissions

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is

proposed on the current footprint of the old I&J facility, with a new warehouse adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The expansion project will include the following:

1. Fish meal and oil reduction plant
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3. Cold store
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5. New canned product warehouse

The reduction process will include the following unit operations:

-- Cooking

-- Pressing

-- Liquid-solid separation

-- Indirect steam drying

-- Waste heat evaporation

-- Oil-liquid separation

-- Cooling / grinding / bagging

-- Boilers for steam generation.

The plant will have a capacity to process a maximum of ±1 000 tons of raw fish per day. The proposed project will produce fish meal and fish oil products for export markets.

The control of odour emissions will be managed by means of Re-generative Thermal Oxidation (RTO). The RTO destroys Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs) and odorous emissions that are often discharged from industrial or manufacturing processes. It operates by burning the ducted air at temperatures of up 850˚C, effectively destroying all organic molecules in the air, including Trimethylamine (TMA), the molecule most commonly associated with fish odour problems.

The RTO represents the Best Available Technology (BAT) currently available in the world for odour management. There are currently no such plants in South Africa in the fishing / fishmeal industry.

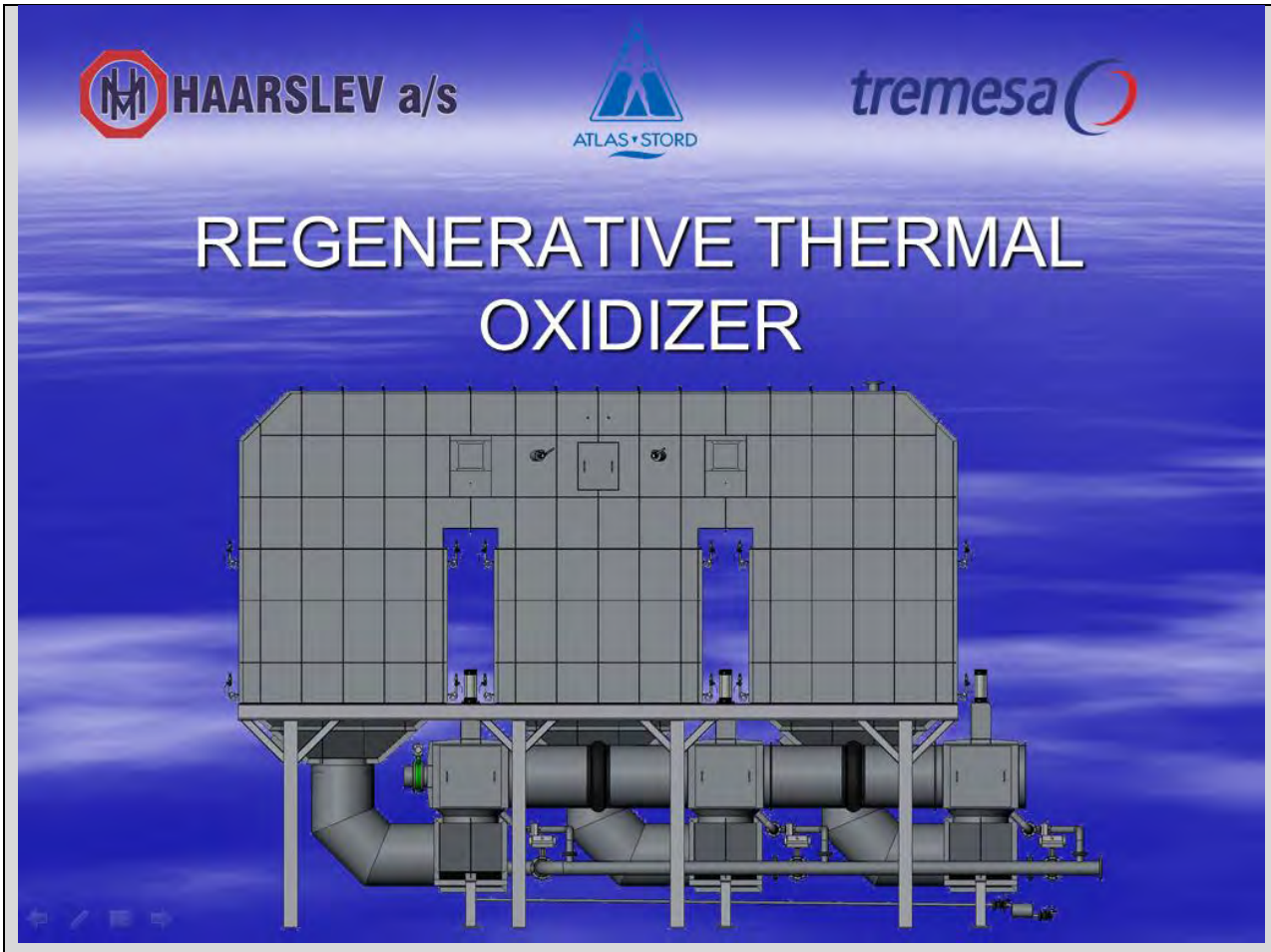


Figure 20: Regenerative Thermal Oxidiser (Haarslev, 2019)

Figure 21: Regenerative Thermal Oxidiser (Tremesa, 2019)

Coastal Water Discharge

The Afro Fishing Cannery has an existing Coastal Water Discharge Permit (CWDP) for the abstraction and discharge of seawater and process water. The proposed facility will require the use of seawater for cooling purposes.

Process vapours and odour point suctions are treated by seawater washing and / or the RTO. Cooling sea water is taken up via a pipeline near the plant and continuously returned to the sea. Return water is approximately 10˚C warmer than intake water. The discharge water is not expected to contain any effluent or solids.

This water will not mix with the press water and therefore only the volume of discharge will increase but not the potential constituents. The discharge pipelines and points already authorised will remain exactly the same.

Other activities (e.g., water abstraction activities, crop planting activities) – Provide brief description below:	~~YES~~	NO

7. PHYSICAL SIZE OF THE PROPOSED DEVELOPMENT

(a) Property size(s): Indicate the size of all the properties (cadastral units) on which the development proposal is to be undertaken	111 463.1m² (11.146ha)	*m²*
(b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken	±12 500m² (1.25ha)	*m²*

(c) Development footprint: Indicate the area that will be physically altered as a result of undertaking any development proposal (i.e., the physical size of the development together with all its associated structures and infrastructure)	±12 500m² (1.25ha)	*m²*
(d) Size of the activity: Indicate the physical size (footprint) of the development proposal	±12 500m² (1.25ha)	*m²*
~~*(e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal*~~	~~*(L)*~~	~~*m*~~
	~~*(W)*~~	~~*m*~~
(f) For storage facilities: Indicate the volume of the storage facility	Area: ±2400m² ± 5760m³ at full capacity	*m³*
~~*(g) For sewage/effluent treatment facilities: Indicate the volume of the facility (Note: the maximum design capacity must be indicated*~~		~~*m³*~~

8. SITE ACCESS

(a) Is there an existing access road?	*YES*	~~*NO*~~
(b) If no, what is the distance in (m) over which a new access road will be built?		*m*

(c) Describe the type of access road planned:

The existing cannery has access from Bland Street only. The redevelopment proposal includes access from the current lease area to the new lease area (old I&J site).

Figure 22: Current access (Urban Engineering, 2019)

Part of the lease agreement between Afro Fishing and Transnet National Ports Authority, included a provision that a gate could be installed between the existing Afro Fishing cannery site and the proposed Fish Meal and Oil Reduction facility. This gate will help to increase circulation between the two facilities and will help distribute traffic to and from the facilities as access will be possible via Portnet gates 2 and 3. Currently Afro Fishing only uses Portnet gate no 2. In other words, vehicles will have the option to either access the site via Bland Street or via Kloof street.

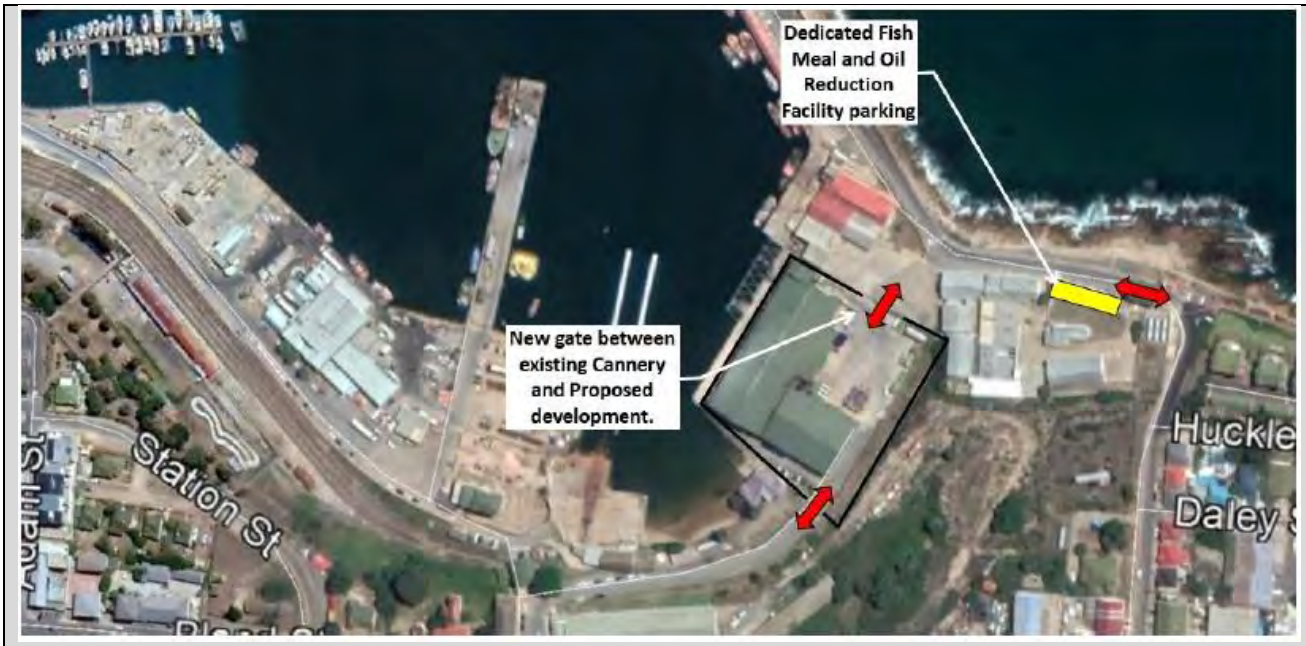


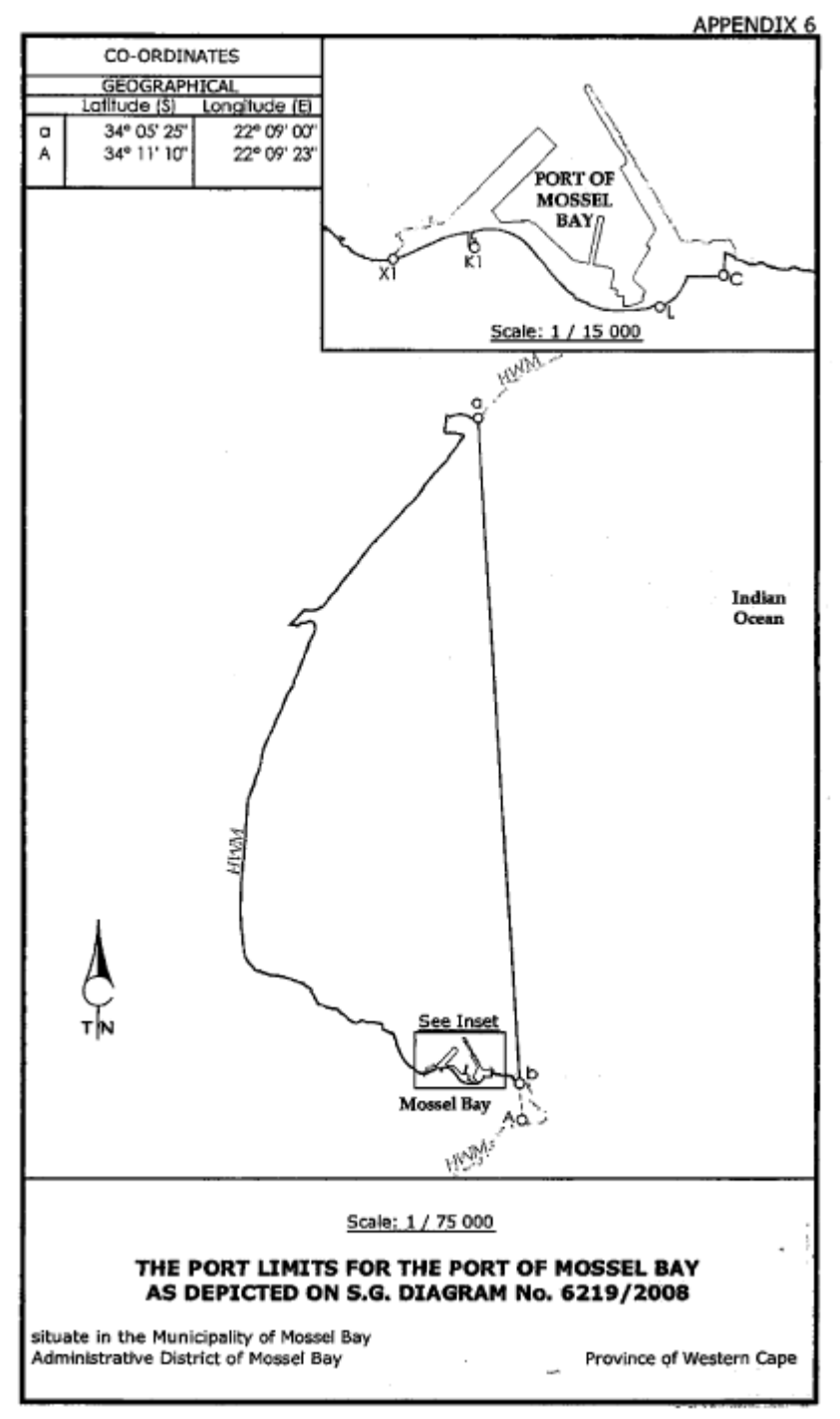
Figure 23: Proposed access routes (Urban Engineering, 2019)

Please note: The position of the proposed access road must be indicated on the site plan.

9. DESCRIPTION OF THE PROPERTY(IES) ON WHICH THE LISTED ACTIVITY(IES) ARE TO BE UNDERTAKEN AND THE LOCATION OF THE LISTED ACTIVITY(IES) ON THE PROPERTY

5.1 Provide a description of the property on which the listed activity(ies) is/are to be undertaken and the location of the listed activity(ies) on the property, as well as of all alternative properties and locations (duplicate section below as required).

The property on which the Afro Fishing facility is proposed is a lease area on Quay 2 of Erf 12459, Mossel Bay that makes up the Port of Mossel Bay under the management of the Transnet National Ports Authority (TNPA). The port falls within the Port Limits for the Port of Mossel Bay as provided for in the National Ports Act, 2005 and gazetted on the 22nd January 2010.



The image below shows the Port of Mossel Bay with its various Quays. The proposed Afro Fishing

facility expansion is indicated in yellow.

Figure 24: Port of Mossel Bay (Google Earth Pro, 2019)

The image below indicates the current and new lease areas that Afro Fishing has entered into with the TNPA.

Figure 25: Port of Mossel Bay lease areas (Delplan, 2019)

Figure 26: Afro Fishing Expansion Area (Mossel Bay GIS Viewer, 2019)

The lease site is the site of the old I&J facility. This facility closed its doors at the end of October 2012.

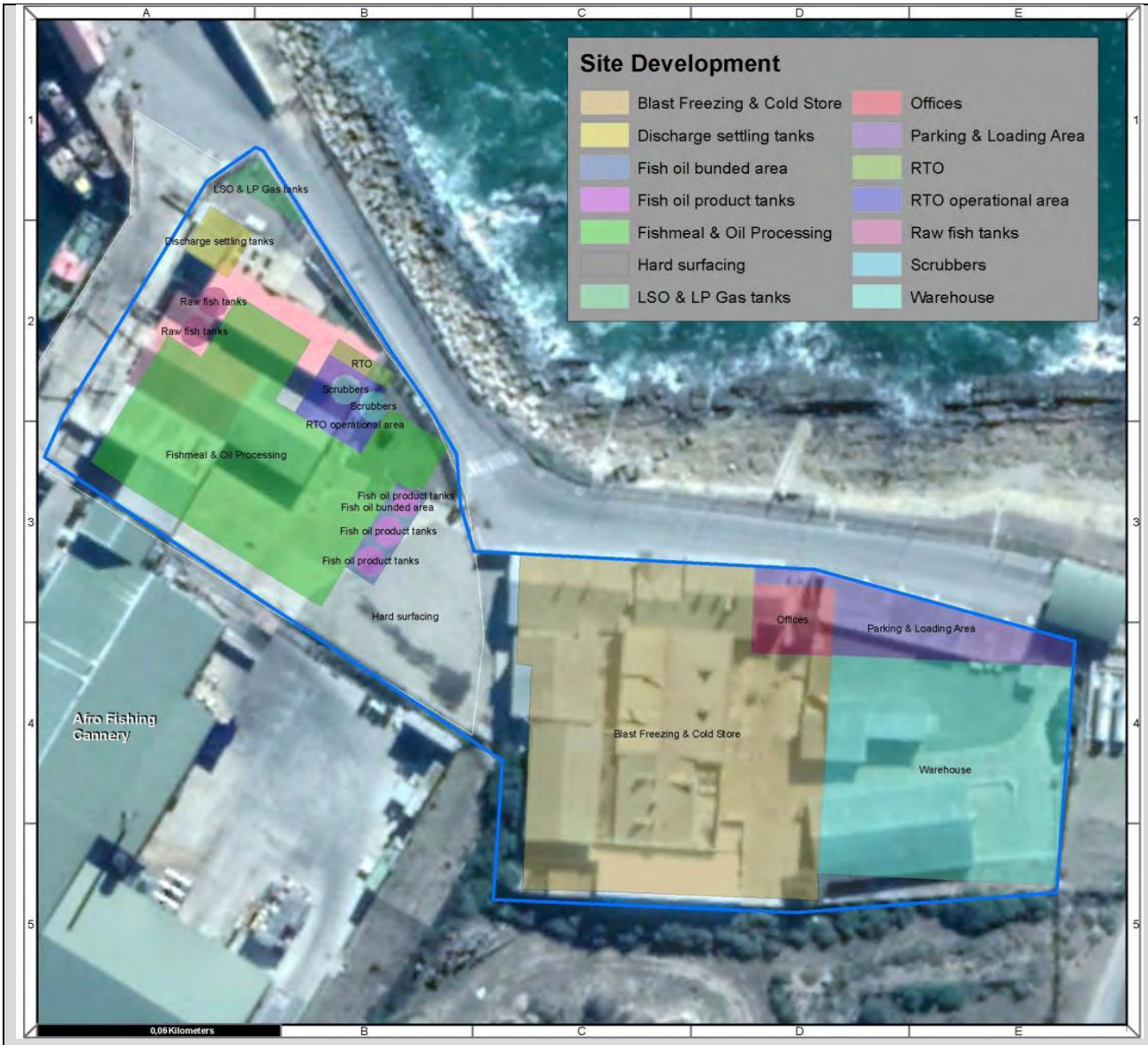


Figure 27: Afro Fishing Expansion Area (VZ Architects, 2019)

	Latitude (S): (deg.; min.; sec)			*Longitude (E): (deg.; min.; sec.)*		
	34˚	10‘	46“	22˚	08‘	59“
Coordinates of all the proposed activities on the property or properties (sites):	°	‘	“	°	‘	“
	°	‘	“	°	‘	“
	°	‘	“	°	‘	“

Note: For land where the property has not been defined, the coordinates of the area within which the development is proposed must be provided in an addendum to this report.

5.2 Provide a description of the area where the aquatic or ocean-based activity(ies) is/are to be undertaken and the location of the activity(ies) and alternative sites (if applicable).

None. The facility will be located on land within the Port of Mossel Bay.

	Latitude (S): (deg.; min.; sec)			*Longitude (E): (deg.; min.; sec)*		
Coordinates of the boundary /perimeter of all proposed aquatic or ocean-based activities (sites) (if applicable):	°	'	"	o	'	"
	°	'	"	o	'	"
	°	'	"	o	'	"
	°	'	"	o	'	"

~~*5.3 For a linear development proposal, please provide a description and coordinates of the corridor in which the proposed development will be undertaken (if applicable).*~~

~~*For linear activities:*~~	~~*Latitude (S): (deg.; min.; sec)*~~			~~*Longitude (E): (deg.; min.; sec)*~~		
• ~~*Starting point of the activity*~~	~~o~~	~~'~~	~~''~~	~~o~~	~~'~~	~~''~~
• ~~*Middle point of the activity*~~	~~o~~	~~'~~	~~''~~	~~o~~	~~'~~	~~''~~
• ~~*End point of the activity*~~	~~o~~	~~'~~	~~''~~	~~o~~	~~'~~	~~''~~

Note: For linear development proposals longer than 1000m, please provide an addendum with co-ordinates taken every 250m along the route. All important waypoints must be indicated and the GIS shape file provided digitally.

5.4 Provide a location map (see below) as Appendix A to this report that shows the location of the proposed development and associated structures and infrastructure on the property; as well as a detailed site development plan / site map (see below) as Appendix B to this report; and if applicable, all alternative properties and locations. The GIS shape files (.shp) for maps / site development plans must be included in the electronic copy of the report submitted to the competent authority.

Locality Map:	*The scale of the locality map must be at least 1:50 000.* *For linear development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map.* *The map must indicate the following:* • *an accurate indication of the project site position as well as the positions of the alternative sites, if any;* • *road names or numbers of all the major roads as well as the roads that provide access to the site(s)* • *a north arrow;* • *a legend;* • *a linear scale;* • *the prevailing wind direction (during November to April and during May to October); and* • *GPS co-ordinates (to indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).* *For an ocean-based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.* *Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94; WGS84 co-ordinate system.*

Site Plan:	*Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:* • *The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be indicated on the plan, preferably together with a linear scale.* • *The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan.* • *The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be indicated on the site plan.* • *The position of each element of the application as well as any other structures on the site must be indicated on the site plan.*

	• *Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the development must be indicated on the site plan.* • *Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.* • *Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to):* o *Watercourses / Rivers / Wetlands - including the 32 meter set back line from the edge of the bank of a river/stream/wetland;* o *Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable;* o *Ridges;* o *Cultural and historical features;* o *Areas with indigenous vegetation (even if degraded or infested with alien species).* • *Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted.* • *North arrow* *A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.* *The GIS shape file for the site development plan(s) must be submitted digitally.*

10. SITE PHOTOGRAPHS

Colour photographs of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached as Appendix C to this report. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.

SECTION B: DESCRIPTION OF THE RECEIVING ENVIRONMENT

1. SITE/AREA DESCRIPTION

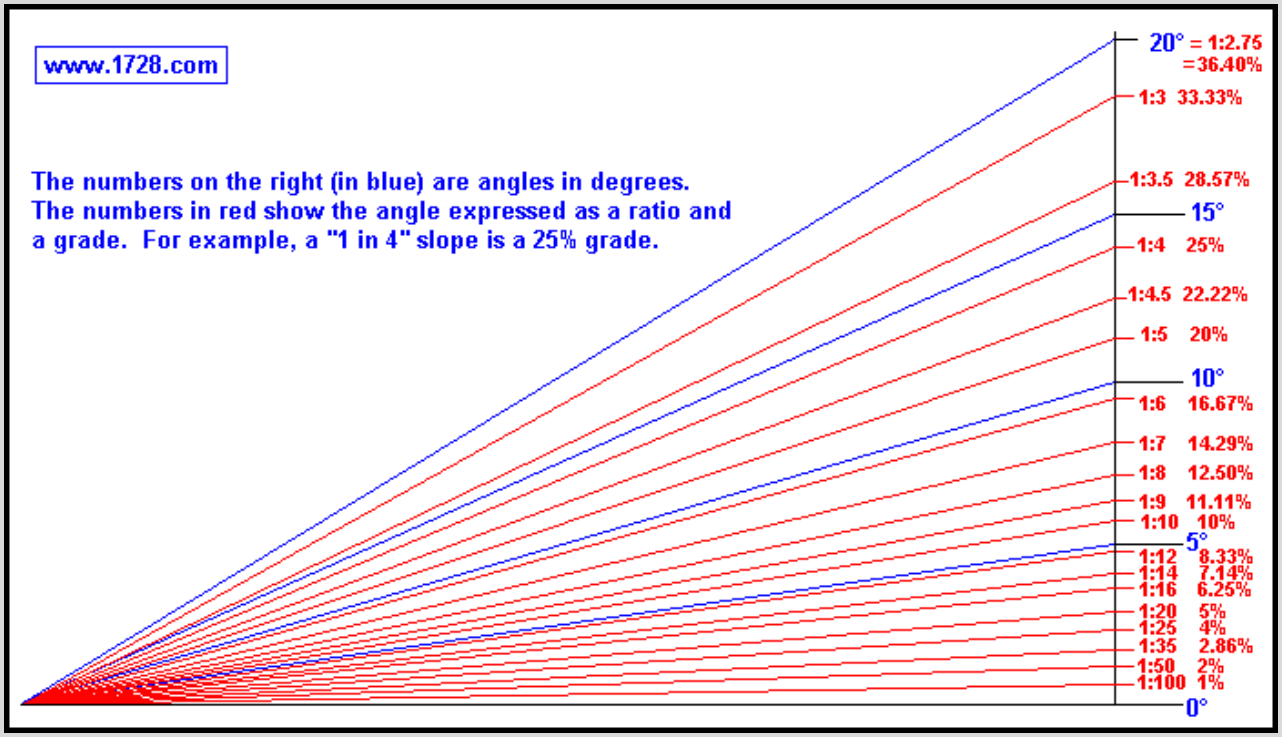
For linear development proposals (pipelines, etc.) as well as development proposals that cover very large sites, it may be necessary to complete copies of this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area that is covered by each copy on the Site Plan.

1.1 GRADIENT OF THE SITE

Indicate the general gradient of the sites (highlight the appropriate box).

Flat	*Flatter than 1:10*	~~*1:10 – 1:4*~~	~~*Steeper than 1:4*~~

According to CapeFarmMapper, the location of the new lease area for Afro Fishing has a slope of between ±1.81 and 5.98 degrees or ±3.16 – 10.60% gradient. The calculation below shows the general gradient ratio as being 1:31.645– 1: 9.546. (http://www.1728.org/gradient.htm, accessed 31 July, 2019).



1.2 LOCATION IN LANDSCAPE

(a) Indicate the landform(s) that best describes the site (highlight the appropriate box(es).

~~*Ridgeline*~~	~~*Plateau*~~	~~*Side slope of hill / mountain*~~	~~*Closed valley*~~	~~*Open valley*~~	~~*Plain*~~	~~*Undulating plain/low hills*~~	~~*Dune*~~	*Sea-front*

(b) Provide a description of the location in the landscape.

The proposed Afro Fishing expansion area is located within the Port of Mossel Bay on Erf 12459.

Figure 28: Afro Fishing Expansion Area (Mossel Bay GIS Viewer, 2019)

Figure 29: Location in the landscape (Google Earth Pro, 2019)

1.3 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

(a) Is the site(s) located on or near any of the following (highlight the appropriate boxes)?

Shallow water table (less than 1.5m deep)	~~*YES*~~	*NO*	~~*UNSURE*~~
Seasonally wet soils (often close to water bodies)	~~*YES*~~	*NO*	~~*UNSURE*~~
Unstable rocky slopes or steep slopes with loose soil	~~*YES*~~	*NO*	~~*UNSURE*~~
Dispersive soils (soils that dissolve in water)	~~*YES*~~	*NO*	~~*UNSURE*~~
Soils with high clay content	~~*YES*~~	*NO*	~~*UNSURE*~~
Any other unstable soil or geological feature	~~*YES*~~	*NO*	~~*UNSURE*~~
An area sensitive to erosion	~~*YES*~~	*NO*	~~*UNSURE*~~
An area adjacent to or above an aquifer.	~~*YES*~~	*NO*	~~*UNSURE*~~
An area within 100m of a source of surface water	~~*YES*~~	*NO*	~~*UNSURE*~~
An area within 500m of a wetland	~~*YES*~~	*NO*	~~*UNSURE*~~
An area within the 1:50 year flood zone	~~*YES*~~	*NO*	~~*UNSURE*~~
A water source subject to tidal influence	~~*YES*~~	*NO*	~~*UNSURE*~~

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (Information in respect of the above will often be available at the planning sections of local authorities. The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

(c) Indicate the type of geological formation underlying the site.

~~*Granite*~~	~~*Shale*~~	*Sandstone*	*Quartzite*	~~*Dolomite*~~	~~*Dolorite*~~	*Other (describe)*

Provide a description.

Although the entire sites are hard surfaced, according to CapeFarmMapper, the soil types and geology of the site are as follows:

Soil Types

Symbol:	CA
Class:	Soils with a strong texture contrast
Description:	Soils with a marked clay accumulation, strongly structured and a non-reddish colour. In addition one or more of vertic, melanic and plinthic soils may be present
Depth:	>= 450 mm and < 750 mm
Clay:	< 15%

Soils & Geology (ENPAT)

Land Type:	Fc41
Soil:	Glenrosa and/or Mispah forms (other soils may occur), lime generally present in the entire landscape
Geology:	Fixed dunes and dune rock with calcrete, as well as quartzitic sandstone of the Table Mountain Group, Cape Supergroup.

1.4 SURFACE WATER

(a) Indicate the surface water present on and or adjacent to the site and alternative sites (highlight the appropriate boxes)?

Perennial River	~~*YES*~~	*NO*	~~*UNSURE*~~
Non-Perennial River	~~*YES*~~	*NO*	~~*UNSURE*~~
Permanent Wetland	~~*YES*~~	*NO*	~~*UNSURE*~~
Seasonal Wetland	~~*YES*~~	*NO*	~~*UNSURE*~~
Artificial Wetland	~~*YES*~~	*NO*	~~*UNSURE*~~
Estuarine / Lagoon	~~*YES*~~	*NO*	~~*UNSURE*~~

(b) Provide a description.

The expansion will entail the redevelopment of the old I&J premises adjacent to the existing Afro Fishing cannery. The area is completed hard surfaced and no surface water is present on the site.

1.5 THE SEAFRONT / SEA

(a) Is the site(s) located within any of the following areas? (highlight the appropriate boxes).
If the site or alternative site is closer than 100m to such an area, please provide the approximate distance in (m).

AREA	*YES*	*NO*	*UNSURE*	***If "YES": Distance** to nearest area (m)*
An area within 100m of the high water mark of the sea	*YES*	~~*NO*~~	~~*UNSURE*~~	
An area within 100m of the high water mark of an estuary/lagoon	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area within the littoral active zone	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area in the coastal public property	~~*YES*~~	*NO*	~~*UNSURE*~~	
Major anthropogenic structures	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area within a Coastal Protection Zone	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area seaward of the coastal management line	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area within the high risk zone (20 years)	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area within the medium risk zone (50 years)	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area within the low risk zone (100 years)	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area below the 5m contour	~~*YES*~~	*NO*	~~*UNSURE*~~	
An area within 1km from the high water mark of the sea	*YES*	~~*NO*~~	~~*UNSURE*~~	
A rocky beach	~~*YES*~~	*NO*	~~*UNSURE*~~	
A sandy beach	~~*YES*~~	*NO*	~~*UNSURE*~~	

The Afro Fishing expansion area is located in the Port of Mossel Bay. Since it is a declared and active port no additional specialist requirements are needed despite the proximity to the sea. It is buffered from coastal surges due to being in the harbour.

The following images show the relation of the development areas to the high water mark and the 100 year run up that was developed as part of the Coastal Setback Lines for the Garden Route District Municipality (previously Eden District).

The high water mark is shown in turquoise below and the 100 year run up in purple in the figure thereafter.

Figure 30: High water mark (Google Earth Pro, 2019)

Figure 31: 100 year coastal run up (Google Earth Pro, 2019)

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

1.6 BIODIVERSITY

Note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed development. To assist with the identification of the biodiversity occurring on site and the ecosystem status, consult http://bgis.sanbi.org or BGIShelp@sanbi.org . Information is also available on compact disc ("cd") from the Biodiversity-GIS Unit, Tel.: (021) 799 8698. This information may be

updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) must be provided as an overlay map on the property/site plan as Appendix D to this report.

(a) Highlight the applicable biodiversity planning categories of all areas on preferred and alternative sites and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category. Also describe the prevailing level of protection of the Critical Biodiversity Area ("CBA") and Ecological Support Area ("ESA") (how many hectares / what percentages are formally protected).

Systematic Biodiversity Planning Category	*~~CBA~~*	*~~ESA~~*	*~~Other Natural Area ("ONA")~~*	*No Natural Area Remaining* ***("NNR")***
If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan and the conservation management objectives	None			
Describe the site's CBA/ESA quantitative values (hectares/percentage) in relation to the prevailing level of protection of CBA and ESA (how many hectares / what percentages are formally protected locally and in the province)	None			

(b) Highlight and describe the habitat condition on site.

Habitat Condition	*Percentage of habitat condition class (adding up to 100%) and area of each in square metre (m^2)*		*Description and additional comments and observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing/harvesting regimes, etc.)*
~~Natural~~	*%*	*m^2*	
~~Near Natural (includes areas with low to moderate level of alien invasive plants)~~	*%*	*m^2*	
~~Degraded (includes areas heavily invaded by alien plants)~~	*%*	*m^2*	
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	*100%*	*±12 500m^2*	The entire site has been hard surfaced and transformed.

(c) Complete the table to indicate:
(i) the type of vegetation present on the site, including its ecosystem status; and
(ii) whether an aquatic ecosystem is present on/or adjacent to the site.

~~Terrestrial Ecosystems~~		*~~Description of Ecosystem, Vegetation Type, Original Extent, Threshold (ha, %), Ecosystem Status~~*
~~Ecosystem threat status as per the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)~~	*~~Critically~~*	
	~~Endangered~~	
	~~Vulnerable~~	
	~~Least Threatened~~	

Aquatic Ecosystems							
Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)			*Estuary*			*Coastline*	
~~*YES*~~	*NO*	~~*UNSURE*~~	~~*YES*~~	*NO*		*YES*	~~*NO*~~

(d) Provide a description of the vegetation type and/or aquatic ecosystem present on the site, including any important biodiversity features/information identified on the site (e.g. threatened species and special habitats). Clearly describe the biodiversity targets and management objectives in this regard.

The Afro Fishing expansion proposal is located on the eastern side of the Port of Mossel Bay. The entire area has been hard surfaced and built up. There are no biodiversity targets or management objectives in relation to threatened species or special habitats.

2. LAND USE OF THE SITE

Note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

~~*Untransformed area*~~	~~*Low density residential*~~	~~*Medium density residential*~~	~~*High density residential*~~	~~*Informal residential*~~
Retail	*Commercial & warehousing*	*Light industrial*	*Medium industrial*	~~*Heavy industrial*~~
~~*Power station*~~	~~*Office/consulting room*~~	~~*Military or police base/station/compound*~~	~~*Casino/entertainment complex*~~	*Tourism and Hospitality facility*
~~*Open cast mine*~~	~~*Underground mine*~~	~~*Spoil heap or slimes dam*~~	~~*Quarry, sand or borrow pit*~~	~~*Dam or reservoir*~~
~~*Hospital/medical centre*~~	~~*School*~~	~~*Tertiary education facility*~~	~~*Church*~~	~~*Old age home*~~
~~*Sewage treatment plant*~~	*Train station or shunting yard*	*Railway line*	~~*Major road (4 lanes and more)*~~	~~*Airport*~~
Harbour	~~*Sport facilities*~~	~~*Golf course*~~	~~*Polo fields*~~	~~*Filling station*~~
~~*Landfill or waste treatment site*~~	~~*Plantation*~~	~~*Agriculture*~~	~~*River, stream or wetland*~~	~~*Nature conservation area*~~
~~*Mountain, koppie or ridge*~~	~~*Museum*~~	~~*Historical building*~~	~~*Graveyard*~~	~~*Archaeological site*~~
Other land uses (describe):				

(a) Provide a description.

Afro Fishing leases a portion of the eastern section of Erf 12459 (Quay 1 and 2) which makes up the Port of Mossel Bay. The port is home to various commercial industries associated with shipping, fishing, transport, tourism and pleasure craft, tourism and pleasure craft. The activities referred to above occur on Erf 12459.

The lease areas themselves only include the Afro Fishery cannery and the old I&J facility which has been standing vacant since October 2012.

3. LAND USE CHARACTER OF THE SURROUNDING AREA

(a) Highlight the current land uses and/or prominent features that occur within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

Note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

Untransformed area	~~*Low density residential*~~	*Medium density residential*	*High density residential*	~~*Informal residential*~~

Retail	*Commercial & warehousing*	*Light industrial*	*Medium industrial*	~~*Heavy industrial*~~
~~*Power station*~~	*Office/consulting room*	~~*Military or police base/station/compound*~~	~~*Casino/entertainment complex*~~	*Tourism and Hospitality facility*
~~*Open cast mine*~~	~~*Underground mine*~~	~~*Spoil heap or slimes dam*~~	~~*Quarry, sand or borrow pit*~~	~~*Dam or reservoir*~~
~~*Hospital/medical centre*~~	~~*School*~~	~~*Tertiary education facility*~~	*Church*	~~*Old age home*~~
~~*Sewage treatment plant*~~	*Train station or shunting yard*	*Railway line*	~~*Major road (4 lanes and more)*~~	~~*Airport*~~
Harbour	*Sport facilities*	~~*Golf course*~~	~~*Polo fields*~~	*Filling station*
~~*Landfill or waste treatment site*~~	~~*Plantation*~~	~~*Agriculture*~~	~~*River, stream or wetland*~~	~~*Nature conservation area*~~
~~*Mountain, koppie or ridge*~~	*Museum*	*Historical building*	*Graveyard*	~~*Archaeological site*~~
Other land uses (describe):				

(b) Provide a description, including the distance and direction to the nearest residential area, industrial area, agri-industrial area.

Figure 32: Land use 500m

The Port of Mossel Bay is located on the northern side of the peninsula and the town has developed around it. The use is very mixed, ranging from industrial, fishing and shipyard use associated with harbours, to commercial, residential, tourism and business use outside of the port limits.

Table 4: Current Port Activities

Category	Type of operation	Description
Freight traffic	Break bulk	Mainly coastwise import and export operations, mainly offshore supply and local fish industry.
	Liquid bulk	CBM and SPM operations, import of crude and export of fuels coastwise.
Other services	Fishing	The port serves resident trawlers and accommodates fish processing plants.
	Maritime engineering	There is a 200 t slipway facility, it caters primarily for repairs to fishing trawlers up to 30 m length.
	Harbour services	Related to port operations and cargo handling.
	Maritime commercial	Cruise vessels anchor in the bay and passengers are ferried to shore. The port accommodates a yacht club, restaurants, fish shops and recreational boating activities.
	Bunker services	Bunker fuel is provided by tanker trucks.

The TNPA Strategic Port Development Plan of 2019 states the following for the Port of Mossel Bay:

The Port of Mossel Bay is expanding its infrastructure to be the premier port for Southern Cape to support oil and gas exploration and to maximize the benefit of its geographical position. The improved infrastructure will enable Oil and Gas companies to use the Port of Mossel Bay as a logistics base for all oil and gas activities during exploration and extraction. The Port's footprint will be increased by incorporating the adjacent Transnet Property into the Port. The Port will expand the utilization of the Catenary Buoy Mooring (CBM) and Single Point Mooring (SPM) for the import and export for petroleum products as well as LPG. The Port will continue to support the local fishing industry by ensuring that available land within Port limits is maximized for this industry.

The Port of Mossel Bay is positioning itself as the gateway to the Garden Route and providing improved facilities for Cruise liners and ensuring a good Port and City integration. This will be complemented by a waterfront development on the western side of the Port, however outside the Operational area of the Port. The Port will also rehabilitate its rail infrastructure to tap into the flow of cargo through the Garden Route and into the hinterland.

4. SOCIO-ECONOMIC ASPECTS

a) Describe the existing social and economic characteristics of the community in the vicinity of the proposed site, in order to provide baseline information (for example, population characteristics/demographics, level of education, the level of employment and unemployment in the area, available work force, seasonal migration patterns, major economic activities in the local municipality, gender aspects that might be of relevance to this project, etc.).

4.1 DEMOGRAPHICS

The following demographic data was obtained from the 2017 – 2022 Integrated Development Plan (IDP) for Mossel Bay.

Mossel Bay has the second largest population in the Eden (sic) District with a population size of 94 135 as per the 2016 Community Survey results. According to the forecasts of the Western Cape Department of Social Development, the population is estimated to reach 97 981 in 2017. This total gradually increases across the 5-year planning cycle and is expected to reach 105 556 by 2023.

This equates to an approximate 7,7 per cent growth off the 2017 base estimate. The population grew on average by 2, 24 per cent between 2001 and 2011 which is consistent with the district-

wide growth of 2 per cent. The town's population increased by 22 641 people over a period of 15 years.

In 2017, Mossel Bay's population gender breakdown will be relatively evenly split between male (47 720, 48,7 per cent) and female (50 261, 51.3 per cent). For 2023, the split is anticipated to 51 225 (48,5 per cent) and 54 331 (51,5 per cent) for males and females respectively.

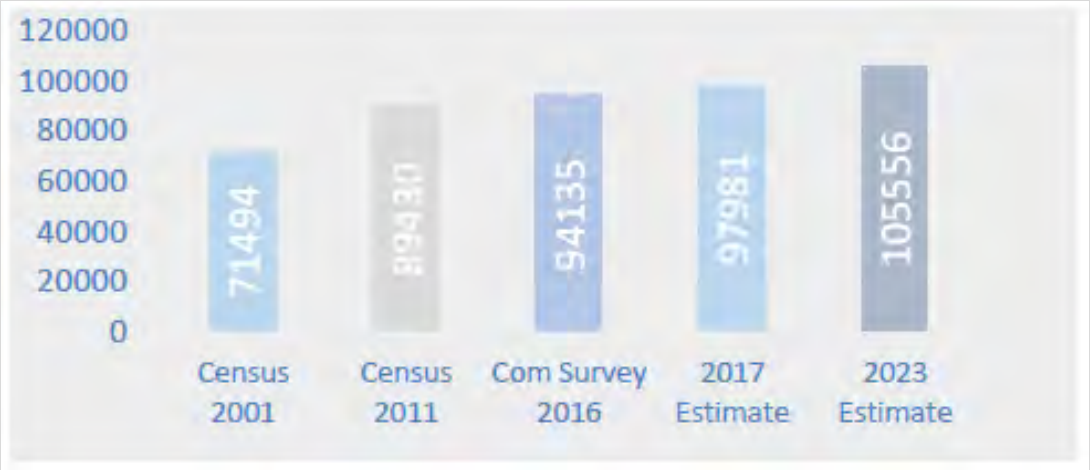


Figure 33: Mossel Bay Population 2001 – 2023 (4th Generation IDP)

Age Distribution

The majority of Mossel Bay's population is concentrated between the ages of 20 to 39, which is possibly reflective of an influx of young working professionals into the region (increased employment opportunities as a result of positive economic growth in the region). It is also noticeable that the population numbers in the older age categories remain relatively high in comparison to other districts. This trend can be attributed to the fact that Mossel Bay and its surrounding areas remain a popular retirement destination.

Mossel Bay's dependency ratio will increase from 49,7 in 2011 to 53,4 in 2017 before stabilising at 53,3 towards 2023. As higher dependency ratios imply greater strain on the working age to support their economic dependents (children and aged), this increase will have far reaching social, economic and labour market implications.

An increase in the dependency ratio is often associated with a relative decrease in the working age population.

From a national perspective, the relative decrease in the working age population will result in lower tax revenues, pension shortfalls and overall inequality as citizens struggle to tend to the needs of their dependents amidst increased economic hardship. At the municipal level, this decrease in the working population will also result in a smaller base from which local authorities can collect revenue for basic services rendered and will necessitate the prioritisation of municipal spending.

Household Income

The annual income for households is divided into three categories, namely the proportion of people that fall within the low, middle- and high -income brackets. Poor households fall under the low-income bracket, which ranges from no income to just over R50 000 annually (R4 166 per month). An increase in living standards can be evidenced by a rising number of households entering the middle- and high-income brackets.

Approximately 52,8 per cent of households fall within the low-income bracket, of which 18 per cent have no income. Less than fifty per cent of households fall within the middle to higher income categories, split between 39,2 per cent in middle income group and 8 per cent in the higher

income group. A sustained increase in economic growth is needed if the 2030 NDP income target of R110 000 per person, per annum is to be achieved.

Amount (2016)	Eden	Mossel Bay	
No income	13,4	18,0	Low income
R1 – R6 327	2,8	2,9	
R6 328 – R12 653	4,4	4,2	
R12 654 – R25 306	14,3	12,6	
R25 307 – R50 613	19,8	15,1	
R50 614 – R101 225	16,9	15,6	Middle Income
R101 226 – R202 450	12,0	13,1	
R202 451 – R404 901	9,0	10,5	
R404 902 – R809 802	5,1	5,2	High income
R809 803 – R1 619 604	1,5	1,8	
R1 619 605 – R3 239 208	0,5	0,6	
R3 239 209 or more	0,3	0,4	

Figure 34: Mossel Bay Income 2016 (4th Generation IDP)

The lower poverty headcount shows that the number of poor people within the Mossel Bay municipal area decreased from 3,2 per cent of the population in 2011 to 2,1 per cent in 2016. The decreasing poverty headcount is positive as it means less strain on municipal financial resources.

Education

Literacy is used to indicate a minimum education level attained. A simple definition of literacy is the ability to read and write, but it is more strictly defined as the successful completion of a minimum of 7 years of formal education.

Since most learners start school at the age of 7 years, the literacy rate is calculated as the proportion of those 14 years and older who have successfully completed a minimum of 7 years of formal education. The literacy rate in Mossel Bay was recorded at 85,7 per cent in 2011 which is higher than the average literacy rates of Eden (82,6 per cent), but lower than the Western Cape (87,2 per cent and higher than the rest of South Africa (80,9 per cent).

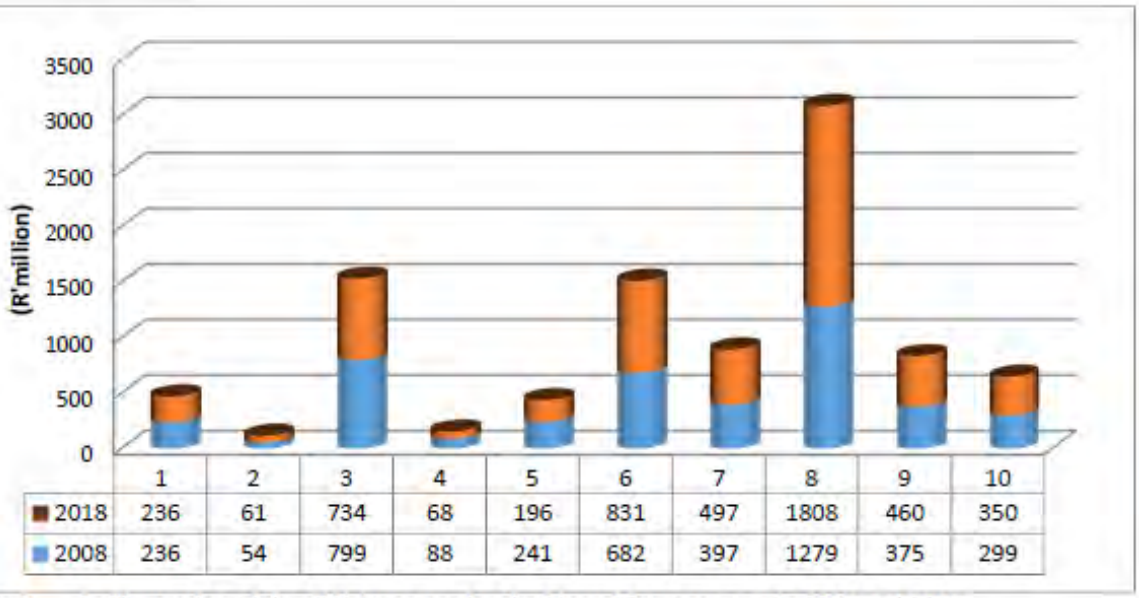
The drop-out rate for learners that enrolled from Grade 10 in 2014 to Grade 12 in 2016 was recorded at 32,5 per cent. This might be because Mossel Bay has 64 per cent of no-fee schools in the municipal area, as research indicates that learners often drop-out of school due to lack of money.

4.2 SOCIO ECONOMIC IMPACT ASSESSMENT

A Socio-Economic Impact Assessment was undertaken by Multi Purpose Business Solutions (MPBS) (2019) to inform this EIA process. The following has been extracted from this report, which is included in its entirety as Annexure G2.

The Mossel Bay economy contributed approximately 17,38% to the economy of the Garden Route District in 2018. In terms of absolute numbers, the economy of Mossel Bay generated R5 242 million of Gross Value Added (GVA)2, when compared to R30 161 million recorded for the Garden Route District. The GVA contribution of the Mossel Bay economy to the Garden Route District decreased from 17,78% in 2008 to 17,38% in 2018. The Mossel Bay economy grew off a solid base by 1.65% per annum from 2008 to 2018, or 17,81% over the 10-year period. The figure below indicates the sector contributions to the GVA of the Mossel Bay economy for 2008 and 2018.

The largest sectors of the Mossel Bay economy were Finance, Insurance, Real Estate and Business Services sector, followed by Manufacturing and Wholesale and Retail. Combined, these three sectors contributed almost 64,35% to the total GVA generated by the Mossel Bay economy in 2018, an increase of 3,76% from 2008. The Finance, Insurance, Real Estate and Business Services has remained the largest contributor to the local GVA over the 10-year period of the analysis. The Manufacturing sector's contribution to the local GVA decreased from 17,95% in 2008 to 14,01% in 2018, whereas Finance, Insurance, Real Estate and Business Services increased its contribution to GVA from 28,74% in 2008 to 34,49% as the largest contributor in 2018.



	1	2	3	4	5	6	7	8	9	10
2018	236	61	734	68	196	831	497	1808	460	350
2008	236	54	799	88	241	682	397	1279	375	299

Figure 8: An illustration of the GVA by sector for the Mossel Bay economy in 2008 and 2018

Legend:

1	Agriculture, hunting, forestry and fishing	6	Wholesale and retail
2	Mining and quarrying	7	Transport, storage and communication
3	Manufacturing	8	Finance, insurance, real estate and business services
4	Electricity, gas and water supply	9	Community, social and personal services
5	Construction	10	Government Services

Source: Adapted from data provided by Quantec Research, 2019

Figure 35: Mossel Bay GVA by sector 2008 - 2018 (MPBS, 2019)

The Garden Route District and Mossel Bay economies grew in nominal terms by 1.65% and 1.88% per annum, respectively, from 2008 to 2018. The Agriculture, Hunting Forestry and Fishing; Mining and Quarrying; Wholesale and Retail; Finance, Insurance, Real estate and Business services; Community, social and personal services and General Government sectors in the local economy achieved higher growth rates than the District over the period 2008 to 2018.

The Finance, Insurance, Real Estate and Business Services, Wholesale and Retail and Transport Storage and Communication sectors demonstrated the highest annual growth rates for the local Municipality over the period 2008 to 2018. In contrast, the Construction sector of contracted by 2,04% per annum between 2008 and 2018 and contributed only 3,75% to the local GVA in 2016, decreasing from 5,.43% in 2008. Reasonably large differentials occurred between the District and Local economy for Manufacturing and Construction. This suggests that Mossel Bay is unable to attract investment in physical capital, i.e. construction when compared to the District.

An assessment of the larger sectors suggests that the contribution of Transport, Storage and Communication remained relatively stable in the local economy from 2008 to 2018, while the contribution of Finance, Insurance, Real Estate and Business Services to total GVA of the local economy increased by 20,00% over the period. The Manufacturing sector showed a decline in its

contribution to GVA, i.e. 17,95% (2008) compared to 14,01% (2018).

A synopsis of the data suggests that four sectors indicated an increased contribution to GVA for the local economy, while six sectors indicated a declining contribution. The trend emerging across the District is not much better with only three sectors increasing their GVA contribution to the District economy. The concern with this trend is the reduction in employment levels within the sectors showing a declining contribution in the local and district economy, which are also normally the more labour-intensive sectors of the economy. A greater focus on sectors with a service orientation has clearly emerged over the 10-year period of the analysis, which are invariably low employment creators when compared to construction, manufacturing and agriculture.

Primary sector

The primary sector of the Mossel Bay economy includes Agriculture, Hunting, Forestry and Fishing activity and Mining and Quarrying. The Primary sector contributed 5,66% to the GVA of the local economy in 2018, which is down from 6,52% in 2008. Agriculture is the largest contributor to the GVA of the Primary sector with a sector contribution of 81,35% in 2008, decreasing slightly to 79,49% in 2018.

Fishing industry

The figure below illustrates the Gross Value Added generated by the Fishing Industry in Mossel Bay on annual basis from 1994 to 2018 together with a five period (year) moving average to demonstrate the troughs and peaks over the period. For the purposes of analysis, the timeline illustrated in below is divided into three periods, 1994 to 2000, 2001 to 2008 and 2009 to 2018. Over the first period, the fishing industry in Mossel Bay contributed R469,1 million to the GVA of Mossel Bay at an average annual amount of R67,0 million per annum, R570,4 million in Period 2 with an average of R71,3 million per annum and R864,8 million in Period 3 at an average of R86,5 million per annum.

A declining trend was evident over the entire period bottoming out in 2001. From 2001, an increasing trend in the gross output of the fishing industry in Mossel Bay became apparent with an increase of 14,93% over the period 2001 to 2007. A short-lived decline aligned with the financial crises of 2008 occurred, followed by a steady increase from 2009 to 2017 with an apparent plateau emerging thereafter.

From the first period (1994 to 2000) to the second period (2001 to 2008), GVA increased by 21,60%, while a significantly higher increase of 51,61% was recorded from the second period to the third (2009 to 2018). This significant increase was also supported by a spike in 2017. Over these three periods, the annual compounded increase/decrease in GVA was -3,79% (Period 1); 0,43% (Period 2) and 2,72% (Period 3).

Figure 36: Contribution of fishing section to Mossel Bay GVA (MPBS, 2019)

Secondary sector

The secondary sector of the Mossel Bay economy includes Manufacturing, Construction and Electricity, Gas and Water Supply. The secondary sector contributed 25.35% to the GVA of the Mossel Bay economy in 2008, while the contribution to GVA decreased to 19.05% in 2018. The contribution of the Manufacturing sector to secondary sector GVA decreased from 70.82% in 2008 to 73.17% in 2018. It should be noted that the secondary sector contribution declined over the period.

Tertiary sector

The tertiary sector of the Mossel Bay economy includes Trade, Repairs and Hospitality, Financial Institutions, Real Estate and Business Services; Community, Social and Personal Services; and Government Services. The tertiary sector contributed 68,14% to the GVA of the local economy in 2008, which increased to 75,29% in 2018.

Government Services are included as part of the tertiary sector for the purposes of the analysis. The analysis suggests that the contribution of Government Services to the GVA of the tertiary sector decreased from 12,36% in 2008 to 11,65% in 2018.

2.3 General employment trends

A comparison of total employment in the Garden Route District and Mossel Bay Municipality indicates that Mossel Bay contributed 15,89% to total employment of the Garden Route District in 2018.

The primary, secondary and tertiary sectors of the Mossel Bay economy contributed 10,18%, 14,68% and 75,14% to total employment in the local economy, respectively, in 2018. In comparison, the Garden Route District enjoyed total employment contributions of 12,14%, 16,01% and 71,85% from the primary, secondary and tertiary sectors, respectively.

Overall employment increased by 34,85% over the period 2001 to 2018 in the Mossel Bay economy. The strong growth in the tertiary sector was offset by declining employment in the primary and secondary sector of the local economy. Strong employment growth was recorded in the tertiary sector with an increase of 62,80% over the period 2001 to 2018, or an average of 2,90% per annum. The Garden Route District experienced similar trends, with a decline of 30,12% recorded for the primary sector, and increases of 23,16% and 62,06% for the secondary and tertiary sectors, respectively.

In terms of employment growth by sector in the Mossel Bay Municipal area and specified periods pre-2008, 2008 - 2011 and post-2011, it is clear that the tertiary sector shed the fewest number of jobs with a decline of 1,17% from 2008 to 2011. The secondary sector and primary sector of the economy shed jobs with declines of 20,43% and 13,88%, respectively, over the period 2008 to 2011. Post 2011, the primary and tertiary sectors clawed back some of the lost jobs, achieving an increase in employment of 9,97% and 14,82% over the period 2012 to 2018. However, the secondary sector continued to shed jobs up to 2018.

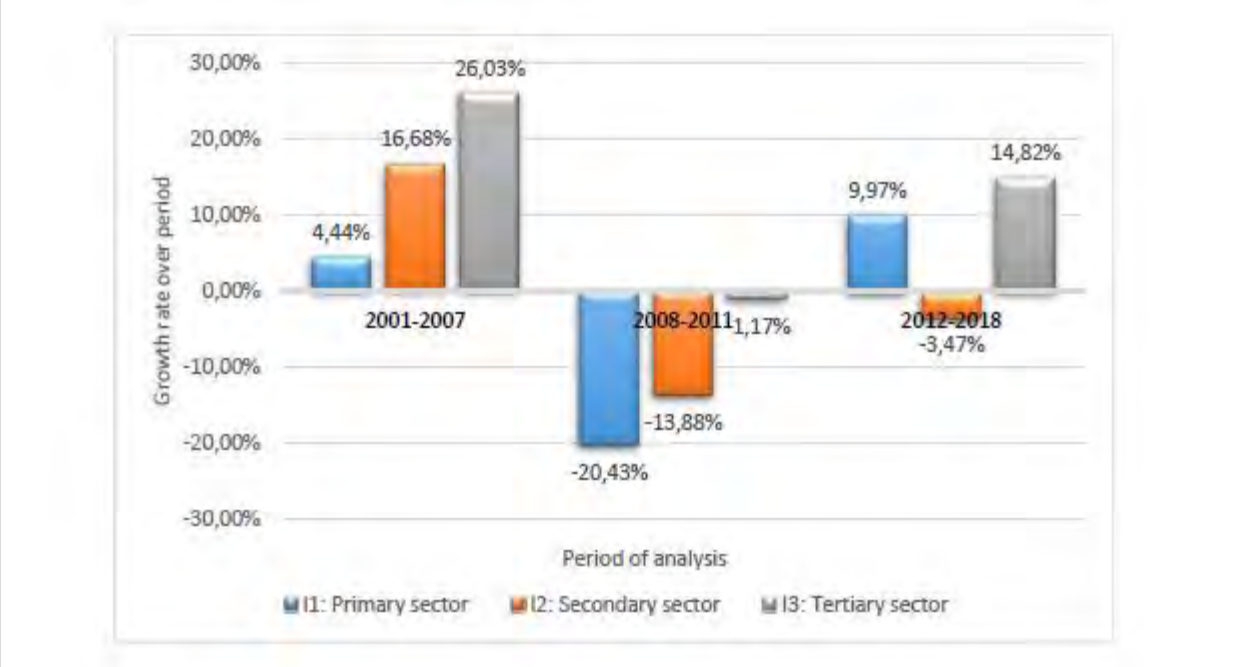


Figure 37: Mossel Bay Employment Growth (MPBS, 2019)

Tourism Trends for Mossel Bay (2013-2015)

It is not possible to derive a figure for the number of foreign and domestic tourist arrivals in the Mossel Bay Municipal area. The figure below represents the number of tourists that visited the Mossel Bay Tourism Office in 2013, 2014 and 2015 on a monthly basis (Mossel Bay Tourism, 2016). It should be noted that the figures presented below do not represent the total number of domestic and foreign tourists that visited the Mossel Bay area in the particular year.

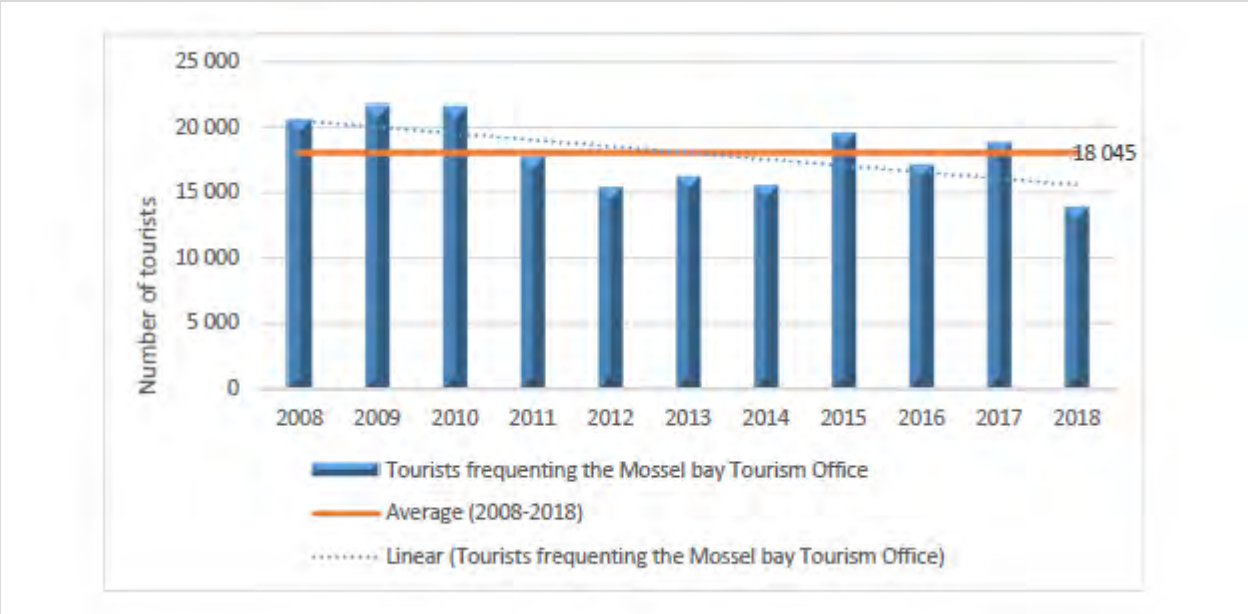


Figure 38: Mossel Bay Tourist Trends (MPBS, 2019)

The total number of tourists that visited the Tourist Office on average from 2008 to 2018 was 18 045. Although it is not possible to make pronouncements as the actual tourism arrivals, it appears that a declining trend over the past 10 years in tourism visitation occurred. As indicted in above, more than 20 000 tourists visited the Tourism Office during 2008 to 2010, while only 16 264 visitors frequented the tourism office during the next four years on average, which implies a reduction of 23.63%. During 2015 to 2018, the number of visitors never reached the highs of the period from 2008 to 2010.

2017-2018 Mossel Bay Tourism Annual Report

Mossel Bay Tourism (MBT) had 191 paid-up member by June 2018, of which 109 were accommodation establishments (Mossel Bay Tourism, 2018). These included 16 hotels & resorts, 34 guesthouses and B&Bs and 44 self-catering establishments. The non-accommodation members included 16 tour operators/transport/guides, 18 adventure & outdoor activities, 12 businesses and 20 restaurants. What is concerning, is that the number of members have declined from 242 in 2016 to only 191 in 2018. There is also a significant decline in the number of walk-in guests at the MBT office, i.e. from 18 870 in 2016-2017 to 13 917 in 2017-2018 – the lowest number recorded for the past 10 years.

The Tourism Office indicated that visitor numbers for the Diaz Museum are the most trustworthy. These peaked in March 2018 (15 798), followed by comparable numbers in March 2017 (11 019), December 2017 (11 768) and January 2018 (11 676). The latter months were boosted by cruise liners that docked in Mossel Bay, with 1 129 visitors disembarking in January 2018.

The Western Cape contributed the largest share of visitors in October and July, with a significant influx of visitors from Gauteng in December, March and July. China and Germany were the dominant sources of foreign visitors, followed by The Netherlands, United Kingdom and France.

The tourism industry is an important economic driver for Mossel Bay. However, it appears that the contribution of the sector to the Mossel Bay economy has not been determined and no information is available in this regard. It is therefore not possible to consider the impact of any negative consequences for the Mossel Bay tourism industry without credible and realistic data. This matter is of a concern to residents insofar as the potential negative impact of air pollution associated with the proposed Afro Fishing fish meal plant.

Arguments are also levelled at the loss of jobs in the tourism industry due to the impact on tourism businesses. No employment figures are available for the Mossel Bay tourism industry and therefore no quantification is possible of potential consequences of a decline in business activity due to unfavourable impacts from the proposed project.

Furthermore, no consideration can be given to the preparation of a cost-benefit analysis. It should also be emphasised that this report is a Socio-economic Impact Assessment and not a Cost-benefit Analysis; the latter would be able to offer a perspective of whether a net benefit or cost is derived from the proposed activity. It will be cumbersome to develop any credible assumptions for such an analysis in the absence of any credible employment and GVA data and therefore this is highlighted as limitation related to the analysis.

5. HISTORICAL AND CULTURAL ASPECTS

(a) Please be advised that if section 38 of the NHRA is applicable to your proposed development, you are requested to furnish this Department with written comment from Heritage Western Cape as part of your public participation process. Heritage Western Cape must be given an opportunity, together with the rest of the I&APs, to comment on any Pre-application BAR, a Draft BAR, and Revised BAR.

Section 38 of the NHRA states the following:

"38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
(b) the construction of a bridge or similar structure exceeding 50m in length;
(c) any development or other activity which will change the character of a site-
(i) exceeding 5 000m² in extent; or
(ii) involving three or more existing erven or subdivisions thereof; or
(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
(d) the re-zoning of a site exceeding 10 000m² in extent; or
(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development".

(b) The impact on any national estate referred to in section 3(2), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii), of the NHRA, must also be investigated, assessed and evaluated. Section 3(2) states the following:
"3(2) Without limiting the generality of subsection (1), the national estate may include—
(a) places, buildings, structures and equipment of cultural significance;
(b) places to which oral traditions are attached or which are associated with living heritage;
(c) historical settlements and townscapes;
(d) landscapes and natural features of cultural significance;
(e) geological sites of scientific or cultural importance;
(f) archaeological and palaeontological sites;
(g) graves and burial grounds, including—
(i) ancestral graves;
(ii) royal graves and graves of traditional leaders;
(iii) graves of victims of conflict;
(iv) graves of individuals designated by the Minister by notice in the Gazette;
(v) historical graves and cemeteries; and
(vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
(h) sites of significance relating to the history of slavery in South Africa;
(i) movable objects, including—
(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
(ii) objects to which oral traditions are attached or which are associated with living heritage;
(iii) ethnographic art and objects;
(iv) military objects;
(v) objects of decorative or fine art;
(vi) objects of scientific or technological interest; and
(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996)".

Is Section 38 of the NHRA applicable to the proposed development?	~~YES~~	NO	~~UNCERTAIN~~
If YES or UNCERTAIN, explain:	A Notice of Intent to Develop (NID) was submitted to Heritage Western Cape (HWC) on the 16th September 2019. According to HWC, there is no reason to believe that the facility will impact on heritage resources and no further action in terms of Section 38 of the National Heritage Resources Act is required. A copy of the correspondence is included in Appendix E of this Application.		
Will the development impact on any national estate referred to in Section 3(2) of the NHRA?	~~YES~~	NO	~~UNCERTAIN~~
If YES or UNCERTAIN, explain:			
Will any building or structure older than 60 years be affected in any way?	~~YES~~	NO	~~UNCERTAIN~~
If YES or UNCERTAIN, explain:			
Are there any signs of culturally or historically significant elements, as defined in section 2 of the NHRA, including Archaeological or paleontological sites, on or close (within 20m) to the site?	~~YES~~	NO	~~UNCERTAIN~~

If YES or UNCERTAIN, explain:	

Note: If uncertain, the Department may request that specialist input be provided and Heritage Western Cape must provide comment on this aspect of the proposal. (Please note that a copy of the comments obtained from the Heritage Resources Authority must be appended to this report as Appendix E1).

6. APPLICABLE LEGISLATION, POLICIES, CIRCULARS AND/OR GUIDELINES

(a) Identify all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to the development proposal and associated listed activity(ies) being applied for and that have been considered in the preparation of the BAR.

LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS	*ADMINISTERING AUTHORITY and how it is relevant to this application*	*TYPE Permit/license/authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval, Water Use License and/or General Authorisation, License in terms of the SAHRA and CARA, coastal discharge permit, etc.)*	*DATE (if already obtained):*
National Environmental Management Act (Act 107 of 1998)	DEA&DP – competent authority for activities triggered by the 2014 EIA Regulations	Environmental Authorisation (EA)	Pending
National Environmental Management: Air Quality Act (Act	Garden Route DM – competent authority for activities triggered by R893 of November 2013	Atmospheric Emissions License (AEL)	Pending post EIA
National Environmental Management Laws Amendment Act (Act 25 of 2014)	DEA&DP & GRDM	Public participation as part of the Environmental Authorisation	Pending
National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008)	Department of Environmental, Forestry & Fisheries: Oceans & Coasts	Coastal Waters Discharge Permit	11/09/2017
National Environmental Management: Biodiversity Act (Act 10 of 2004)	DEA&DP – competent authority for activities triggered by the 2014 EIA Regulations	None	None
National Heritage Resources Act (Act 25 of 1999)	Heritage Western Cape – competent authority for activities triggered by Section 38 of the NHRA	None	04/10/2019
National Water Act (Act 36 of 1998)	Department of Water & Sanitation	None	None
National Forest Act (Act 84 of 1998)	Department of Forestry	None	None
2017 – 2022 Fourth Generation Integrated Development Plan	Mossel Bay Municipality	Planning compatibility	NA
National Ports Plan 2017	Transnet National Ports Authority (TNPA)	Planning compatibility	NA

(b) Describe how the proposed development complies with and responds to the legislation and policy context, plans, guidelines, spatial tools, municipal development planning frameworks and instruments.

LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS	*Describe how the proposed development complies with and responds:*
National Environmental Management Act (Act 107 of 1998)	The application for Environmental Authorisations and this BAR complies with the requirements for NEMA.
National Environmental Management: Air Quality Act (Act	The Basic Assessment process also informs the competent authority issuing the Atmospheric Emissions License. Once the process is completed the AEL can be issued to the facility in terms of this Act.
National Environmental Management Laws Amendment Act (Act 25 of 2014)	The public participation requirements must form part of the Basic Assessment process.
National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008)	The Basic Assessment process also informs the competent authority issuing the Coastal Waters Discharge Permit. Once the process is completed an update to the existing CWDP can be issued to the facility in terms of this Act.
Guideline for involving biodiversity specialists in the EIA process (June 2005)	Given the location of the erven in an industrial area that has been 100% transformed, no input from biodiversity specialists other than the EAP, was deemed necessary.
Guideline for environmental management plans (June 2005)	This guideline was consulted in the drafting of the EMPr.
Guideline on Alternatives (March 2013)	The consideration of alternatives is mandatory, however given that this application if for the expansion of an existing fisheries industry, site, design and layout alternatives were not feasible.
Guideline on Need & Desirability (March 2013)	This guideline was consulted along with the relevant IDP and SDP documentation to determine the need for such a facility.
Guideline on Public Participation (March 2013)	The consultation process was undertaken in terms of these guidelines and the legislated requirements for PPP.
2017 – 2022 Fourth Generation Integrated Development Plan	The proposed development is in line with the municipality's IDP for the harbour precinct.
National Ports Plan 2017	The proposed development is in line with the planning for the Port of Mossel Bay.

Note: Copies of any comments, permit(s) or licences received from any other Organ of State must be attached to this report as Appendix E.

SECTION C: PUBLIC PARTICIPATION

The PPP must fulfil the requirements outlined in the NEMA, the EIA Regulations, 2014 (as amended) and if applicable, the NEM: WA and/or the NEM: AQA. This Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must also be taken into account.

1. *Please highlight the appropriate box to indicate whether the specific requirement was undertaken or whether there was an exemption applied for.*

In terms of Regulation 41 of the EIA Regulations, 2014 (as amended) -			
(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -			
(i) the site where the activity to which the application relates, is or is to be undertaken; and	*YES*	~~*EXEMPTION*~~	
(ii) any alternative site	~~*YES*~~	~~*EXEMPTION*~~	*N/A*
(b) giving written notice, in any manner provided for in Section 47D of the NEMA, to –			
(i) the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	*YES*	~~*EXEMPTION*~~	~~*N/A*~~
(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	*YES*	~~*EXEMPTION*~~	
(iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;	*YES*	~~*EXEMPTION*~~	
(iv) the municipality (Local and District Municipality) which has jurisdiction in the area;	*YES*	~~*EXEMPTION*~~	
(v) any organ of state having jurisdiction in respect of any aspect of the activity; and	*YES*	~~*EXEMPTION*~~	
(vi) any other party as required by the Department;	*YES*	~~*EXEMPTION*~~	~~*N/A*~~
(c) placing an advertisement in -			
(i) one local newspaper; or	*YES*	*EXEMPTION*	
(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	~~*YES*~~	~~*EXEMPTION*~~	*N/A*
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken	~~*YES*~~	~~*EXEMPTION*~~	*N/A*
(e) using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to— *(i) illiteracy;* *(ii) disability; or* *(iii) any other disadvantage.*	~~*YES*~~	~~*EXEMPTION*~~	*N/A*
If you have ***indicated that "EXEMPTION" is applicable to any of the above, proof of the exemption decision must be*** *appended to this report.*			
Please note that for the NEM: WA and NEM: AQA, a notice must be placed in at least two newspapers circulating in the area where the activity applied for is proposed.			
If applicable, has/will an advertisement be placed in at least two newspapers?	*YES*	~~*NO*~~	
If "NO", then proof of the exemption decision must be appended to this report.			

2. *Provide a list of all the State Departments and Organs of State that were consulted:*

State Department / Organ of State	*Date request was sent:*	*Date comment received:*	*Support / not in support*
DEA: Oceans & Coasts Ms Tandiwe Njajula, Email: TNjajula@environment.gov.za	22/02/2019 07/11/2019		
DEA&DP: Coastal Management Ms Ieptieshaam Bekko, Email:	22/02/2019 07/11/2019		

ieptieshaam.bekko@westerncape.gov.za			
Department of Agriculture, Forestry and Fisheries *Fisheries Management:* Ms Janet Coetzee, Email: JanetC@daff.gov.za	07/11/2019		
Department of Agriculture, Forestry and Fisheries *Marine Resources Management:* Mr Johan de Goede, Email: JohannesDG@daff.gov.za	07/11/2019		
WC Department of Health Mr Manie Abrahams, Email: Manie.Abrahams@westerncape.gov.za	22/02/2019 07/11/2019		
Cape Nature Mr Colin Fordham, Email: cfordham@capenature.co.za	22/02/2019 07/11/2019		
Garden Route District Municipality *Air Quality Control:* Dr Johan Schoeman, Email jschoeman@gardenroute.gov.za	22/02/2019 07/11/2019		
Garden Route District Municipality *Air Quality Control:* Mr Angus Andries, Email: Angus@gardenroute.gov.za	22/02/2019 07/11/2019		
Garden Route District Municipality *Municipal Health & Environmental Services:* Mr Johan Compion, Email: JCompion@gardenroute.gov.za	22/02/2019 07/11/2019		
Garden Route District Municipality Municipal Health: Mr Sam Bendle, Email: sam@gardenroute.gov.za	07/11/2019		
Transnet National Ports Authority:	22/02/2019		

Mr Shadrack Tshikalange, Email: Shadrack.Tshikalange@transnet.net	07/11/2019		

3. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated, or the reasons for not including them.
(The detailed outcomes of this process, including copies of the supporting documents and inputs must be included in a Comments and Response Report to be attached to the BAR (see note below) as Appendix F).

During the public participation provided for the review of the Background Information Document (BID) and the preliminary Air Quality Impact Assessment, the following concerns were raised (please note that this is a summary and the full version of the issues raised along with the responses is included as Annexure F5):

- Odour

  Significant concern was raised regarding potential odour, mostly in reaction to experiences associated with existing fishmeal plants currently in operation in South Africa. Afro Fishing is proposing a state of the arts facility implementing the Best Available Technology (BAT) in the form of the RTO. The impacts have been rated as Very Low by the air quality specialist.

- Traffic

  Concern was raised regarding transport of raw fish through the Mossel Bay CBD. No raw fish will be transported from the facility as the fish will arrive by boat at the harbour, taken directly into the factory and processed. Transport will only apply to the final product, and staff / visitor transport. The traffic assessment confirmed that the impact of the facility on traffic will be negligible.

- Effect on tourism and local businesses

  Concern was raised that odour could have a negative impact on tourism and the sense of place of Mossel Bay. Afro Fishing is proposing a state of the arts facility implementing the Best Available Technology (BAT) in the form of the RTO. The impacts have been rated as Very Low by the air quality specialist. The potential impacts can therefore be mitigated. Although there is the potential for a medium negative impact, there is also potential for positive impacts associated with business opportunities and economic linked to the development.

- Impact on surrounding property values

  Concern was raised about the potential impact on the sense of place and nuisance factors, and the socio-economic specialist determined that the Afro Fishing project could have a medium negative residual impact on the tourism offering in Mossel Bay. It must be noted that the redevelopment of the site from its current status quo will be an improvement on the sense of place.

- Increase in crime

  Concern was raised that the increase in employment opportunities will lead to an influx of people coming into the CBD and increasing crime. TNPA applies strict access control to the Port Limits, which will add a high level of security during the construction phase. Co-operation between the Developer and the contractors is essential; fencing and on-site security measures will minimise the risk.

- Influx of job seekers

A significant number of employment opportunities would be linked to the proposed project, which may add to the current influx of job seekers experienced in Mossel Bay. This is a positive impact in terms of the socio-economic development of Mossel Bay and negative impacts can be mitigated by ensuring that local job seekers are considered higher priority.

- Pollution of the bay

  Concern was raised regarding issues of pollution in the bay. Afro Fishing currently has a Coastal Waters Discharge Permit which is regularly monitored for compliance for its existing facility. The expanded facility will require an amendment to this permit due to an increase in volume of discharge. The expanded facility will allow Afro Fishing to improve on their effluent quality treatment as all water that has protein in it can be processed in the fishmeal plant.

- Development of aquaculture in the bay

  Some issues were raised that Afro Fishing would be implementing an aquaculture facility as part of this development. This is categorically untrue. Afro Fishing does not, nor intends to develop any sort of aquaculture facility. It is not in their business model nor in their area of expertise.

Apart from the public participation generated by the EAP, several media articles were also circulated serving to raise awareness of the process, the proposal, as well as highlighting the plans for the Port of Mossel Bay by TNPA. Copies of these have been included as Annexure F6 of the BAR.

4. *Provide a summary of any conditional aspects identified / highlighted by any Organs of State, which have jurisdiction in respect of any aspect of the relevant activity.*

The air quality impact assessment provides the following conditional requirements which must be implemented to ensure that the development does not create a nuisance. Any AEL issued by the Garden Route District Municipality will include these aspects for ensuring air quality management.

- As some of the products of the fishmeal process are destined for human consumption, it is recommended that only freshly harvested fish is processed at the proposed fishmeal plant in order to comply with the current health and hygiene requirements of the canning process.
- It is of paramount importance that all process equipment in the fishmeal plant is cleaned and sanitised at regular intervals to minimise the formation of odours between production runs. It is recommended that a cleaning procedure and schedule is defined for this purpose.
- It is recommended that a preventative maintenance program is designed and implemented with the assistance of the preferred technology supplier to ensure that the equipment operates at optimum conditions.
- It is of paramount importance that the extraction system that gather fumes from the various process steps and designed properly to ensure that the correct volume of air is extracted from each point. While it can be assembled locally, it is recommended that design of this system is left to the supplier of the RTO so that a well-balanced system is installed.
- It is recommended that specific attention is paid to the day-to-day operation of the RTO as its availability is of key importance to remove odorous emissions from the plant. As is the case with the process equipment, it is recommended that a formal maintenance procedure and schedule is developed for the RTO and this schedule meets the requirements of the equipment supplier.
- It is recommended that supervisory personnel in charge of the operation of the fishmeal plant receive thorough training in the operation and maintenance of the process, especially the RTO, to ensure that breakdowns and kept to a minimum and that fault diagnosis and

correction can be achieved in the shortest period of time.

- It is recommended that the TMA emissions from the RTO stack are verified biannually by and independent contractor.
- It is recommended further that emissions from the boilers are verified on a biennial basis by an independent contractor.

Note:
Even if pre-application public participation is undertaken as allowed for by Regulation 40(3), it must be undertaken in accordance with the requirements set out in Regulations 3(3), 3(4), 3(8), 7(2), 7(5), 19, 40, 41, 42, 43 and 44.

If the "exemption" option is selected above and no proof of the exemption decision is attached to this BAR, the application will be refused.

A list of all the potential I&APs, including the Organs of State, notified and a list of all the registered I&APs must be submitted with the BAR. The list of registered I&APs must be opened, maintained and made available to any person requesting access to the register in writing.

The BAR must be submitted to the Department when being made available to I&APs, including the relevant Organs of State and State Departments which have jurisdiction with regard to any aspect of the activity, for a commenting period of at least 30 days. Unless agreement to the contrary has been reached between the Competent Authority and the EAP, the EAP will be responsible for the consultation with the relevant State Departments in terms of Section 24O and Regulation 7(2) – which consultation must happen simultaneously with the consultation with the I&APs and other Organs of State.

All the comments received from I&APs on the BAR must be recorded, responded to and included in the Comments and Responses Report included as Appendix F of the BAR. If necessary, any amendments made in response to comments received must be effected in the BAR itself. The Comments and Responses Report must also include a description of the PPP followed.

The minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded, must also be submitted as part of the public participation information to be attached to the final BAR as Appendix F.

Proof of all the notices given as indicated, as well as notice to I&APs of the availability of the Pre-Application BAR (if applicable), Draft BAR, and Revised BAR (if applicable) must be submitted as part of the public participation information to be attached to the BAR as Appendix F. In terms of the required "proof" the following must be submitted to the Department:

- *a site map showing where the site notice was displayed, a dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;*
- *in terms of the written notices given, a copy of the written notice sent, as well as:*
  - *if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);*
  - *if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);*
  - *if a facsimile was sent, a copy of the facsimile report;*
  - *if an electronic mail was sent, a copy of the electronic mail sent; and*
  - *if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and*
- *a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).*

SECTION D: NEED AND DESIRABILITY

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website: http://www.westerncape.gov.za/eadp). In this regard, it must be noted that the Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010 published by the national Department of Environmental Affairs on 20 October 2014 (GN No. 891 on Government Gazette No. 38108 refers) (available at: http://www.gov.za/sites/www.gov.za/files/38108_891.pdf) also applied to EIAs in terms of the EIA Regulations, 2014 (as amended).

1. Is the development permitted in terms of the property's existing land use rights?	*YES*	~~*NO*~~	~~*Please explain*~~
The Port of Mossel Bay is a working harbour that supports commercial fishing industries. The expansion of the existing facility to accommodate fishmeal and fish oil from raw product is in line with the current land uses within the harbour, as well as the future development envisaged by TNPA. The TNPA, Afro Fishing and the Mossel Bay Municipality are currently in discussions regarding the various consent uses and how to apply them within the harbour.			
2. Will the development be in line with the following?			
(a) Provincial Spatial Development Framework ("PSDF").	*YES*	~~*NO*~~	*Please explain*
According to the 2014 PSDF, areas such as fishing harbours should be targeted for the regeneration and revitalisation of urban economies. The Port of Mossel Bay has also been identified as a "strategic harbour" located within an emerging regional centre. This makes it one of only 3 strategic harbours identified in the Western Cape.			

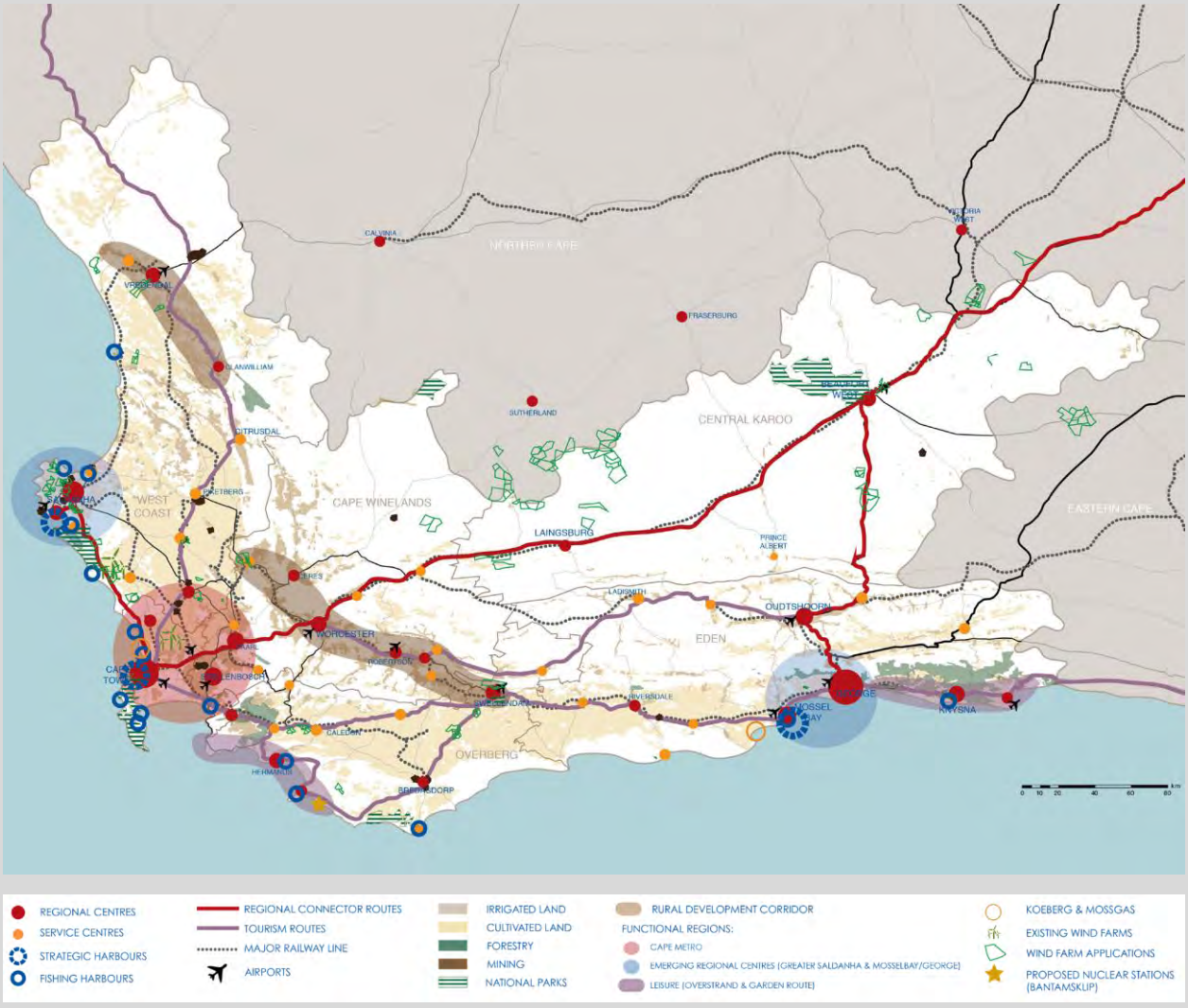


Figure 39: Space Economy Policies (PSDF, 2014)

(b) Urban edge / edge of built environment for the area.	*YES*	~~*NO*~~	*Please explain*

The Port of Mossel Bay is a working harbour that supports commercial fishing industries and is located inside the urban edge of Mossel Bay.			
(c) Integrated Development Plan and Spatial Development Framework of the Local Municipality (e.g., would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	*YES*	~~*NO*~~	*Please explain*
The site of the existing cannery and the old I&J site are part of the area of the port that will remain part of the commercial fisheries precinct as currently provided for and envisaged for future development by TNPA.			
(d) An Environmental Management Framework ("EMF") adopted by this Department. (e.g., Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	~~*YES*~~	*NO*	*Please explain*
There is no EMF applicable to the site.			
(e) Any other Plans (e.g., Integrated Waste Management Plan (for waste management activities), etc.)).	*YES*	~~*NO*~~	*Please explain*
Garden Route Air Quality Management Plan. The applicability of Best Available Technology (BAT) is strongly supported by the GRAQMP.			
3. Is the land use (associated with the project being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (in other words, is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	*YES*	~~*NO*~~	*Please explain*
The landuse associated with Quay 1 and Quay 2 are for commercial fishing industries and are in line with both the municipal planning priorities as well as the TNPA.			
4. Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur on the proposed site at this point in time?	*YES*	~~*NO*~~	*Please explain*
The proposed expansion of the Afro Fishing facility is in keeping with the commercial fishing industry precinct of the Port of Mossel Bay.			
5. Does the community/area need the project and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g., development is a National Priority, but within a specific local context it could be inappropriate.)	*YES*	~~*NO*~~	*Please explain*
The socio economic benefits of the proposed expansion support the needs identified by the Mossel Bay IDP in terms of spatial development, economic stimulus and job creation. Furthermore, the technology proposed adds to the TNPA's promotion of excellence and innovation within its port precincts.			
6. Are the necessary services available together with adequate unallocated municipal capacity (at the time of application), or must additional capacity be created to cater for the project? (Confirmation by the relevant municipality in this regard must be attached to the BAR as Appendix E.)	*YES*	~~*NO*~~	*Please explain*
The previous operator, I&J, had services in place and it has been confirmed that these available to Afro Fishing for their expansion.			
7. Is this project provided for in the infrastructure planning of the municipality and if not, what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant municipality in this regard must be attached to the BAR as Appendix E.)	*YES*	~~*NO*~~	*Please explain*
There is no requirement for additional infrastructure planning as the proposed expansion entails the redevelopment of a previous fisheries facility. If, during final design of the sewage connections, upgrades to the existing pumps / rising mains are required, higher capacity pumps and/or larger rising mains will be installed.			
8. Is this project part of a national programme to address an issue of national concern or importance?	~~*YES*~~	*NO*	*Please explain*

The proposed expansion does not form part of a particular national programme, however it can be seen to be in support of the following:

- National Development Policy and Legislative Context

  Afro Fishing subscribes to the NDP by contributing to economic growth through direct investment, as well as additional labour absorption through an increase in employment due to expansion of production. The Planning Commission proposed increasing exports, focusing on those areas where South Africa already has endowments and comparative advantage, in several areas of which agro-processing1 is of relevance to Afro Fishing. The removal of structural impediments is essential to achieve higher rates of investment and competitiveness, and expanding production and exports. Investment in superstructure, the objective of becoming a global player, increasing production and contributing to exports, form the basis of the underlying focus of the initiative proposed by Afro Fishing.

- Operation Phakisa – Oceans Economy

  Operation Phakisa focuses on unlocking the economic potential of South Africa's oceans, which could contribute up to R177 billion to the GDP by 2033 and between 800 000 and 1 million direct jobs.

  By focusing on six priority growth areas, the Oceans Economy will unlock the economic potential of South Africa's oceans, providing significant GDP growth and job creation potential. Two enablers, namely:
  1) Skills and Capacity Building and
  2) Research, Technology and Innovation, support the six work streams.

9. Do location factors favour this land use (associated with the development proposal and associated listed activity(ies) applied for) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.)	*YES*	~~*NO*~~	*Please explain*

The expansion of Afro Fishing onto the immediately adjacent Quay 2 within the port precinct is strongly supported.

10. Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	~~*YES*~~	*NO*	*Please explain*

The proposed expansion will take place on an area that is already significantly transformed. Heritage Western Cape has also confirmed that no sensitive cultural areas will be impacted on.

11. Will the development impact on people's health and well-being (e.g., in terms of noise, odours, visual character and 'sense of place', etc.)?	~~*YES*~~	*NO*	*Please explain*

The implementation of the proposed technology in the form of the Regenerative Thermal Oxidiser (RTO) will not lead to nuisance odours, nor will it impact on the visual character and sense of place of the port.

12. Will the proposed development or the land use associated with the proposed development applied for, result in unacceptable opportunity costs?	~~*YES*~~	*NO*	*Please explain*

The opportunity costs associated with the proposed development will not be unacceptable.

13. What will the cumulative impacts (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be?

Cumulative impacts refer to any other developments as well as existing activities within the immediate area that could compound any positive or negative impacts associated with the proposed development. The Old Town area is fully developed, with mainly renovations that are foreseen in terms of new construction activities. The recent discovery of the gas fields suitable for exploration just off Mossel Bay (Brulpadda) may also result in additional infrastructure required for mining of the gas fields. A new Waterfront development has been proposed for the Mossel Bay

Harbour area, which include the area to the west of the Vincent Jetty and along the south-eastern border of the Afro Fishing site.

The potential negative impacts would be compounded if additional developments were introduced in the immediate and surrounding areas. These impacts would typically relate to sense of place, traffic, infrastructure requirements, crime and nuisance factors. The employment and economic income benefits of a number of developments in the greater Mossel Bay area could also be compounded.

14. Is the development the best practicable environmental option for this land/site?	*YES*	~~*NO*~~	*Please explain*

The site forms part of the Port of Mossel Bay, in an area designated for commercial fishing industry, it is located immediately adjacent to the existing Afro Fishing cannery, it has harbour access for offloading of fish, it has no biodiversity impacts as it has already been significantly transformed and the redevelopment of the site will not exceed any of the existing building restriction already in place for the old I&J facility.

15. What will the benefits be to society in general and to the local communities?	*Please explain*

A number of benefits are associated with the proposed Afro Fishing Project:

1. Job creation: The findings of the employment analysis are considered in the context of the entire development with capital expenditure phased in over a 3-year period. Based on the different scenarios, the project could sustain 95 to 104 jobs per month on average (over the construction period of 3 years) in the Western, or 105 to 118 jobs per month on average if considered at the local (Mossel Bay) level (Mossel Bay has a lower GVA to employment levels). During operations, the project could initially (Year 1) create 456 jobs in the Mossel Bay area if productivity remained constant and increasing to 502 if external influences on demand are considered.

In terms of the Western Cape, an estimated total of 10 222 jobs could be sustained during the first 10 years of operation or approximately 1 000 direct, indirect and induced jobs per annum on average. When the impact on Mossel Bay is considered, 1 100 direct, indirect and induced jobs per annum on average could be sustained of which 560 are direct jobs.

2. Contribution towards economic income: During the construction phase, a combined initial investment of R437 million (R349,6 million net of the initial import leakage) will give rise to a multiplied increase in GVA of R3 845,6 million in the Western Cape Province. Based on the initial direct expenditure, a large propensity to import goods and services, and the contribution of the Mossel Bay area to the Western Cape Province, approximately R162,44 million will accrue to the area over and above the initial direct capital expenditure on these components.

A forecast of the revenue over the 10 years once the facility is fully operational (less an estimated leakage) will give rise to a multiplied increase in GVA of R5 799,407 million in the Western Cape Province over the first 10 years of the project (with no assumption as to the estimated stabilising year). Based on the initial direct expenditure, a large propensity to import goods and services, and the contribution of Mossel Bay to the Western Cape Province, approximately R102,8 million will accrue to the area over and above the initial operational revenue. Note, the revenue figures used for these calculations are confidential.

3. Socio-economic prescriptions have become a standard inclusion in the submission of development proposals to relevant government departments at local, provincial and national level, and in this context refer to socio-economic development contribution requirements of the Economic Development Scorecard.

Afro Fishing adheres fully to the Enterprise and Supplier Development requirement and Socio-economic Development contributions stated in the Policy and 80% to the Enterprise Development in the terms of the Policy and by implication the BBBEE Code.

4. Contribution towards infrastructure: The need for sewerage, potable and fire water will be within

the old I&J quantities, but there will be a substantial increase in the power requirement for additional heating and chilling facilities. Although Afro Fishing will only need one new 185 mm2 PILC 11 kV cable, the project will pay for a second cable to cater for further developments in the precinct and to improve the stability of the electricity supply ring in Mossel Bay.

16. Any other need and desirability considerations related to the proposed development?	*Please explain*

Nothing additional to that provided in this report and the specialist reports.

17. Describe how the general objectives of Integrated Environmental Management as set out in Section 23 of the NEMA have been taken into account:

(1) The purpose of this Chapter is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities,

(2) The general objective of integrated environmental management is to:

(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment:

(b) *identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management set out in section 2;*

This report follows the edicts to identify, predict and evaluate the actual and potential impacts associated with this development. The specialist studies have shown that the expected expansion emissions are below the official thresholds. This is borne out further by obtaining actual air quality sampling data from existing facilities undertaking the same processing with the same type of technology. No further mitigations are currently required.

(*c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them*;

This has been done by means of specialist investigations to determine baseline and predict the impacts associate with the proposal, with the use of sampling data from existing facilities. The preferred alternative has been identified as the one having the least negative impacts and making use of existing disturbed areas.

(d) *ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment*;

This process follows the requirements of the 2014 EIA Regulations (as amended) and the NEMA Amendment Laws Act (Act 25 of 2014) for conducting a Public Participation Process.

(e) *ensure the consideration of environmental attributes in management and*

An Environmental Management Programme (EMPr) has been included to ensure that the construction, operation and any potential decommissioning of the facility in the future is managed in line with environmental requirements and Best Practise Principles. Furthermore the applicant will require an Air Emissions License (AEL) which will have specific environmental requirements for monitoring and management.

(f) *decision-making which may have a significant effect on the environment; and identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2*.

This process is being undertaken in terms of Section 2 of NEMA.

(3) *The Director-General must coordinate the activities of organs of state referred to in section 24(1) and assist them in giving effect to the objectives of this section and such assistance may include training, the publication of manuals and guidelines and the co-ordination of procedures*.

All relevant guidelines and procedures have been used to produce this document and provide relevant information in order for sufficient co-governance to be implemented.

18 *Describe how the principles of environmental management as set out in Section 2 of the NEMA have been taken into account:*

Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

The proposal for the expansion of the current cannery is linked to the need for the company to diversify in order to ensure business success and employment creation and retention, along with the need to produce good quality fish products.

Development must be socially, environmentally and economically sustainable.

The proposal for the expansion of the current cannery is linked to the need for the company to diversify in order to ensure business success and employment creation and retention, along with the need to produce good quality fish products. It also fits into the TNPA and municipal requirements for economic development and excellence within the Port to support improved employment opportunities and skills development.

Sustainable development requires the consideration of all relevant factors including the following:

• *That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*

The expansion has no additional impact on ecosystems nor creates a loss for biodiversity. The implementation of the RTO will provide Best Available Technology (BAT) for air quality management on site and lead to source reduction of organic materials going to waste.

• *that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*

The odour source reduction by means of the proposed RTO system will provide Best Available Technology (BAT) for air quality management on site and lead to source reduction of organic materials going to waste, which strongly supports this principle.

• *that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*

The expansion does not affect any cultural heritage sites.

• *that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner*;

The odour source reduction by means of the proposed RTO system will provide Best Available Technology (BAT) for air quality management on site and lead to source reduction of organic materials going to waste, which strongly supports this principle.

• *that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*

The cannery and the proposed fishmeal and fish oil reduction facility will makes use of electricity and water saving devices wherever possible on the premises.

• *that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised*;

The expansion will not impact on the biodiversity targets associated with the ecosystem type.

• *that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and*

The specialist studies and the impact predictions for the development are based on current knowledge and expertise.

• *that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*

The preferred alternative is based on specialist input and aimed at avoiding significant impacts

wherever possible, whilst ensuring the development of facilities for sustainable development.

Environmental management must be integrated. Acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

The preferred alternative has been determined to be the best practicable environmental options based on specialist input and existing land uses.

Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

The development provides opportunities in an industry that has high opportunity costs and strong traditional involvement for local fishing communities.

Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

The expansion of the cannery to include the fishmeal and fish oil reduction facility will not lead to discrimination of any persons.

Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

The consideration for the environment must be practised by the applicant for the duration of the life span of the development. This will be achieved by means of the Atmospheric Emissions License (AEL) which has clear monitoring and management requirements addressing the emission impacts which are deemed to have the highest potential impacts, albeit low.

The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

This process meets the requirements for participation by interested and affected parties.

Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.

The DEA&DP and the Garden Route District Municipality will take into account the inputs from all interested and affected parties obtained during this process.

Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

The sharing of the information obtained during this investigation, as well as the input from interested and affected parties is aimed at ensuring that all relevant parties have access to all information and are able to improve their awareness of the impacts associated with this development.

The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated and decisions must be appropriate in the light of such consideration and assessment.

This Basic Assessment Report (BAR) has been developed to ensure that all relevant information can be considered, assessed and evaluated in order for DEA&DP and the Garden Route District Municipality to make their decision.

The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.

The Occupational Health & Safety Act is applicable to construction and operation of the facility.

Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.

All correspondence with and information provided to the competent authority is available to anyone who requests it. The decision by DEA&DP and the Garden Route District Municipality will consider all relevant information and the reasons for any decision will be communicated to all interested and affected parties.

There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.

Inclusion of all relevant state departments and organs of state encourages intergovernmental strategies. This process has two mandated competent authorities, the DEA&DP and the Garden Route District Municipality.

Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.

Not currently applicable but will be addressed if it becomes necessary.

Global and international responsibilities relating to the environment must be discharged in the national interest.

The control of emissions is of global importance and the requirements of the AEL is aimed at achieving these international standards. Furthermore, the human health requirements for products such as fish oil provides very strict criteria for the export and sale of products that come from this facility.

The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.

The expansion of the Afro Fishing facility will not cause undue damage to the environment, and will provide for an important aspect of diversifying the business in a sensitive and environmentally considerate fashion.

The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or multiplier pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

The holders of any authorisation will be required to comply with conditions to ensure that the environment is not adversely affected. Penalties associated with contraventions of these conditions will be applicable. AEL reporting is undertaken on a yearly basis and must conform with the required emission standards. AEL renewals take place on a five yearly basis and must comply with the requirements for NEM:AQA to be renewed.

The vital role of women and youth in environment management and development must be recognised and their full participation therein must be promoted.

Gender consideration is practised by the facility in terms of employment and management.

Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.

The expansion does not impact on ecosystems referred to above.

SECTION E: DETAILS OF ALL THE ALTERNATIVES CONSIDERED

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website http://www.westerncape.gov.za/eadp.

The EIA Regulations, 2014 (as amended) defines "alternatives" as " in relation to a proposed activity, means different means of fulfilling the general purpose and requirements of the activity, which may include alternatives to the—
(a) property on which or location where the activity is proposed to be undertaken;
(b) type of activity to be undertaken;
(c) design or layout of the activity;
(d) technology to be used in the activity; or
(e) operational aspects of the activity;
(f) and includes the option of not implementing the activity;"

The NEMA (section 24(4)(a) and (b) of the NEMA, refers) prescribes that the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, inter alia, with respect to every application for environmental authorisation –

- *ensure that the general objectives of integrated environmental management laid down in the NEMA and the National Environmental Management Principles set out in the NEMA are taken into account; and*
- *include an investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity.*

The general objective of integrated environmental management (section 23 of NEMA, refers) is, inter alia, to "identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management" set out in the NEMA.

The identification, evaluation, consideration and comparative assessment of alternatives directly relate to the management of impacts. Related to every identified impact, alternatives, modifications or changes to the activity must be identified, evaluated, considered and comparatively considered to:

- *in terms of negative impacts, firstly avoid a negative impact altogether, or if avoidance is not possible alternatives to better mitigate, manage and remediate a negative impact and to compensate for/offset any impacts that remain after mitigation and remediation; and*
- *in terms of positive impacts, maximise impacts.*

1. DETAILS OF THE IDENTIFIED AND CONSIDERED ALTERNATIVES AND INDICATE THOSE ALTERNATIVES THAT WERE FOUND TO BE FEASIBLE AND REASONABLE

Note: A full description of the investigation of alternatives must be provided and motivation if no reasonable or feasible alternatives exists.

(a) Property and location/site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No property and location sites were considered as the application is for the expansion of the existing Afro Fishing facility on Quay 1 to include the immediately adjacent old I&J premises on Quay 2 of the Port of Mossel Bay. The existing facility is defunct but is already equipped with the necessary infrastructure for water and sewage, it is located in an area designated by the TNPA for commercial fishing industries, it has direct harbour proximity for the offloading of fish directly into the factory and the site location limits impacts on the town with respect to traffic and transport of raw fish off site. The applicant is also not in possession of, nor has any lease for any other properties that offer an alternate site option for such a facility.

It is not economically nor practically feasible or reasonable to propose an alternative site.

Figure 40: Afro Fishing Expansion Area (Mossel Bay GIS Viewer, 2019)

(b) Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Alternative 1 (Preferred Alternative)

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is proposed on the current footprint of the old I&J facility, with a new warehouse adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The expansion project will include the following:

1. Fish meal and oil reduction plant
2. Fish freezing plant
3. Cold store
4. Fish meal warehouse
5. New canned product warehouse

The reduction process will include the following unit operations:

-- Cooking

-- Pressing

-- Liquid-solid separation

-- Indirect steam drying

-- Waste heat evaporation

-- Oil-liquid separation

-- Cooling / grinding / bagging

-- Boilers for steam generation.

The plant will have a capacity to process a maximum of ±1 000 tons of raw fish per day. The proposed project will produce fish meal and fish oil products for export markets. The project will positively impact local service providers, the Mossel Bay economy, SMME's and ancillary industries. In terms of employment opportunities, the expansion will increase direct employment from 341 to approximately 560 persons.

Afro Fishing (Pty) Ltd envisages an investment of R350-400m in this project. The investment will diversify Afro Fishing into other fisheries, namely anchovy, sardinella and red-eye herring. The project will increase the canned fish production of which a large percentage of the canned fish production goes into the National Schools Nutrition Programme where Afro Fishing supplies 'affordable protein' for school feeding.

The design of the plant, especially the use of RTO (re-generative thermal oxidation) is based on a similar facility, Narciso Dias & Filhos, LDA, located in Peniche, Portugal. The reason for this is due to the similarity in location (seaside town) with tourism as a main driver for the economy. The use of RTO in the plant led to significantly improved odour control management and eliminated offensive odour problems previously experienced. The RTO destroys Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs) and odorous emissions that are often discharged from industrial or manufacturing processes.

The RTO represents the Best Available Technology (BAT) currently available in the world for odour management. There are currently no such plants in South Africa in the fishing / fishmeal industry.

Plant Operation and Management

Offloading of fish

Depending on the size and capacity of the fishing vessel, approximately two to four vessels are expected to dock at the plant's jetty per day during the peak fishing season. Once the vessel has docked, fish will be pumped off the vessel using a wet offloading pneumatic suction system. The fish is conveyed through closed pipelines to a set of industrial batch scales and weighed. The fish is then pumped or conveyed into stainless steel tanks to limit the impact of high ambient temperatures.

Water pumped off the vessel will be removed from the fish using dewatering screens. The cold water will be recycled and returned to the fishing vessel. Once the vessel is offloaded this water will either be treated by the factory or returned to the fishing vessel for dumping at sea.

The plant and its management are responsible for the vessel and carry liability for any pollution emanating from the vessel while it is docked at the jetty of the fishmeal plant. Once in the bay, responsibility and liability for the vessels transfers to the owner of the boat.

Fish processing

The fish processing sequence is as follows:

- From the stainless-steel storage tank, the fish mass is pumped or conveyed to the cookers. The cooker screw that transports the fish through the cooker is powered by an electric motor. The fish is cooked using steam generated by LSO-fired boilers. Cooking coagulates the protein, ruptures the fat deposits and liberates oil and bound water.
- From the cooker, the cooked fish is fed to a twin-screw press, which separates most of the solid fish material from the liquid (water and oil) fraction of the cooked fish.
- The press water is sent to a set of centrifuges. These separate the remaining fish oil from the press water. The press water contains high levels of dissolved protein and minerals.
- The press water is pumped to a waste heat evaporator / concentration plant, where the valuable elements in the press water are recovered through evaporation of the excess water content. This process uses waste heat from the driers to evaporate off the excess water and produce a fish concentrate with 35 – 38% solid material content. The fish concentrate is added back to the press cake before drying.
- Process vapours and odour point suctions are treated by seawater washing and/or the RTO. Cooling sea water is taken up via a pipeline near the plant and continuously returned to the sea. Return water is approximately 10˚C warmer than intake water. The discharge water is not expected to contain any effluent or solids.
- The solids (press cake) is mixed with the fish concentrate and sent to the indirect steam dryers, where the remaining water is evaporated and a stable, sterilised fishmeal product is produced.
- The dry fishmeal is then milled, treated with an antioxidant before weighed, bagged and stored in a warehouse for a curing period of at least two weeks.
- Fishmeal is then despatched to export markets in 50 kg bags in closed shipping containers.
- Fish oil is pumped from the centrifuges to a fish oil storage tank and later dispatched in tankers or drums in shipping containers.

The company aims to diversify its business model within the fishing industry and as such no alternatives for activity are proposed. It must be noted that there is also no need to amend or change the activity due to negative impacts, as the impacts associated with the current activity proposal have a potential negligible to medium impact and can easily be mitigated.

The implementation of an RTO for the odour management is non-negotiable as it presents the Best Available Technology (BAT) in reducing the levels of TMA produced by fish deterioration.

No-Go Alternative

The No-Go Alternative retains the status quo of the facility. Thus the cannery retains its current operations on Quay 1 and no further development is proposed on Quay 2.

It must be noted that the property on Quay 2 can at any time be developed for any other fishing industry.

(c) Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

There are no design / layout alternatives for consideration as the requirements for a fishmeal & fish oil reduction facility are governed by the process flow for ensuring correct cooking of the product and oil extraction, as well as health protocols for human consumption products. Furthermore, the design specifications to ensure that the building has the correct extraction and ducting for collecting point source odour airflow and transporting it to the RTO, and ensures a negative air pressure to prevent air leakage are very precise.

(d) Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

There are no technology alternatives being proposed. The implementation of the RTO for the odour management is non-negotiable as it has been shown to be the Best Available Technology (BAT) in managing fishmeal odours.

(e) Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

There are no operational alternatives for consideration as the requirements for a fishmeal & fish oil reduction facility are governed by the process flow for ensuring correct cooking of the product and oil extraction, as well as health protocols for human consumption products. Furthermore, the design specifications to ensure that the building has the correct extraction and ducting for collecting point source odour airflow and transporting it to the RTO, and ensures a negative air pressure to prevent air leakage are very precise.

(f) The option of not implementing the activity (the 'No-Go' Option):

The No-Go option implies that the status quo is maintained, with no additional socio-economic impacts. In addition, the opportunity exists for other development to take place on the site as part of the TNPA's future planning. These other facilities may not require an Air Emissions License (AEL), in which case no EIA will be required as development within the Port on an existing disturbed site does not trigger the NEMA listed activities where no AEL is necessary.

(g) Other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

None

(h) Provide a summary of all alternatives investigated and the outcome of each investigation:

Alternative 1 (Preferred Alternative)

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is proposed on the current footprint of the old I&J facility, with a new warehouse adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The expansion project will include the following:

1. Fish meal and oil reduction plant

2. Fish freezing plant
3. Cold store
4. Fish meal warehouse
5. New canned product warehouse

The reduction process will include the following unit operations:

-- Cooking

-- Pressing

-- Liquid-solid separation

-- Indirect steam drying

-- Waste heat evaporation

-- Oil-liquid separation

-- Cooling / grinding / bagging

-- Boilers for steam generation.

The plant will have a capacity to process a maximum of ±1 000 tons of raw fish per day. The proposed project will produce fish meal and fish oil products for export markets. The project will positively impact local service providers, the Mossel Bay economy, SMME's and ancillary industries. In terms of employment opportunities, the expansion will increase direct employment from 341 to approximately 560 persons.

Afro Fishing (Pty) Ltd envisages an investment of R350-400m in this project. The investment will diversify Afro Fishing into other fisheries, namely anchovy, sardinella and red-eye herring. The project will increase the canned fish production of which a large percentage of the canned fish production goes into the National Schools Nutrition Programme where Afro Fishing supplies 'affordable protein' for school feeding.

The design of the plant, especially the use of RTO (re-generative thermal oxidation) is based on a similar facility, Narciso Dias & Filhos, LDA, located in Peniche, Portugal. The reason for this is due to the similarity in location (seaside town) with tourism as a main driver for the economy. The use of RTO in the plant led to significantly improved odour control management and eliminated offensive odour problems previously experienced. The RTO destroys Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs) and odorous emissions that are often discharged from industrial or manufacturing processes.

The RTO represents the Best Available Technology (BAT) currently available in the world for odour management. There are currently no such plants in South Africa in the fishing / fishmeal industry.

Plant Operation and Management

Offloading of fish

Depending on the size and capacity of the fishing vessel, approximately two to four vessels are expected to dock at the plant's jetty per day during the peak fishing season. Once the vessel has docked, fish will be pumped off the vessel using a wet offloading pneumatic suction system. The fish is conveyed through closed pipelines to a set of industrial batch scales and weighed. The fish is then

pumped or conveyed into stainless steel tanks to limit the impact of high ambient temperatures.

Water pumped off the vessel will be removed from the fish using dewatering screens. The cold water will be recycled and returned to the fishing vessel. Once the vessel is offloaded this water will either be treated by the factory or returned to the fishing vessel for dumping at sea.

The plant and its management are responsible for the vessel and carry liability for any pollution emanating from the vessel while it is docked at the jetty of the fishmeal plant. Once in the bay, responsibility and liability for the vessels transfers to the owner of the boat.

Fish processing

The fish processing sequence is as follows:

- From the stainless-steel storage tank, the fish mass is pumped or conveyed to the cookers. The cooker screw that transports the fish through the cooker is powered by an electric motor. The fish is cooked using steam generated by LSO-fired boilers. Cooking coagulates the protein, ruptures the fat deposits and liberates oil and bound water.
- From the cooker, the cooked fish is fed to a twin-screw press, which separates most of the solid fish material from the liquid (water and oil) fraction of the cooked fish.
- The press water is sent to a set of centrifuges. These separate the remaining fish oil from the press water. The press water contains high levels of dissolved protein and minerals.
- The press water is pumped to a waste heat evaporator / concentration plant, where the valuable elements in the press water are recovered through evaporation of the excess water content. This process uses waste heat from the driers to evaporate off the excess water and produce a fish concentrate with 35 – 38% solid material content. The fish concentrate is added back to the press cake before drying.
- Process vapours and odour point suctions are treated by seawater washing and/or the RTO. Cooling sea water is taken up via a pipeline near the plant and continuously returned to the sea. Return water is approximately 10˚C warmer than intake water. The discharge water is not expected to contain any effluent or solids.
- The solids (press cake) is mixed with the fish concentrate and sent to the indirect steam dryers, where the remaining water is evaporated and a stable, sterilised fishmeal product is produced.
- The dry fishmeal is then milled, treated with an antioxidant before weighed, bagged and stored in a warehouse for a curing period of at least two weeks.
- Fishmeal is then despatched to export markets in 50 kg bags in closed shipping containers.
- Fish oil is pumped from the centrifuges to a fish oil storage tank and later dispatched in tankers or drums in shipping containers.

The company aims to diversify its business model within the fishing industry and as such no alternatives for activity are proposed. It must be noted that there is also no need to amend or change the activity due to negative impacts, as the impacts associated with the current activity proposal have a potential negligible to medium impact and can easily be mitigated.

The implementation of an RTO for the odour management is non-negotiable as it presents the Best Available Technology (BAT) in reducing the levels of TMA produced by fish deterioration.

No-Go Alternative

The No-Go Alternative retains the status quo of the facility. Thus the cannery retains its current operations on Quay 1 and no further development is proposed on Quay 2.

It must be noted that the property on Quay 2 can at any time be developed for any other fishing industry.

(i) Provide a detailed motivation for not further considering the alternatives that were found not feasible and reasonable, including a description and proof of the investigation of those alternatives:

The only potential alternative that could be presented is that of site alternative as the design and layout are very specific to the activity. However, a site located outside of the harbour leads to more negative impacts and issues due to the following:

- The existing Afro Fishing facility on Quay 1 is immediately adjacent to the old I&J premises on Quay 2 of the Port of Mossel Bay. This ensures better control over the site as all the activities are in close proximity of each other.
- The old I&J facility is defunct but is already equipped with the necessary infrastructure for water and sewage. No extensive new services are required.
- The site is located in an area designated by the TNPA for commercial fishing industries. An alternative site outside of the jurisdiction of the harbour will likely affect or displace other land uses.
- It has direct harbour proximity for the offloading of fish directly into the factory. This ensures that the fish retains its freshness which further limits nuisance odours.
- The site location limits impacts on the town with respect to traffic and transport of raw fish off site. The transport of fish from previous factories through the town which led to ice water leaking and odours was highlighted as a concern by I&APs. Transport of fish will also lead to higher traffic volumes.
- The applicant is also not in possession of, nor has any lease for any other properties that offer an alternate site option for such a facility.

2. PREFERRED ALTERNATIVE

(a) Provide a concluding statement indicating the preferred alternative(s), including preferred location, site, activity and technology for the development.

The expansion of the current Afro Fishing facility to include fish meal and oil reduction processes is proposed on the current footprint of the old I&J facility, with a new warehouse adjacent to the current Afro Fishing store.

The proposal entails the harvesting of industrial fish, e.g. anchovy, red-eye, etc., from local waters for the sole purpose of producing fishmeal and fish oil.

The expansion project will include the following:

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3. Cold store

4. Fish meal warehouse
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The plant will have a capacity to process a maximum of ±1 000 tons of raw fish per day. The proposed project will produce fish meal and fish oil products for export markets. The project will positively impact local service providers, the Mossel Bay economy, SMME's and ancillary industries. In terms of employment opportunities, the expansion will increase direct employment from 341 to approximately 560 persons.

Afro Fishing (Pty) Ltd envisages an investment of R350-400m in this project. The investment will diversify Afro Fishing into other fisheries, namely anchovy, sardinella and red-eye herring. The project will increase the canned fish production of which a large percentage of the canned fish production goes into the National Schools Nutrition Programme where Afro Fishing supplies 'affordable protein' for school feeding.

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be treated by the factory or returned to the fishing vessel for dumping at sea.

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- Process vapours and odour point suctions are treated by seawater washing and/or the RTO. Cooling sea water is taken up via a pipeline near the plant and continuously returned to the sea. Return water is approximately 10˚C warmer than intake water. The discharge water is not expected to contain any effluent or solids.
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- Fishmeal is then despatched to export markets in 50 kg bags in closed shipping containers.
- Fish oil is pumped from the centrifuges to a fish oil storage tank and later dispatched in tankers or drums in shipping containers.

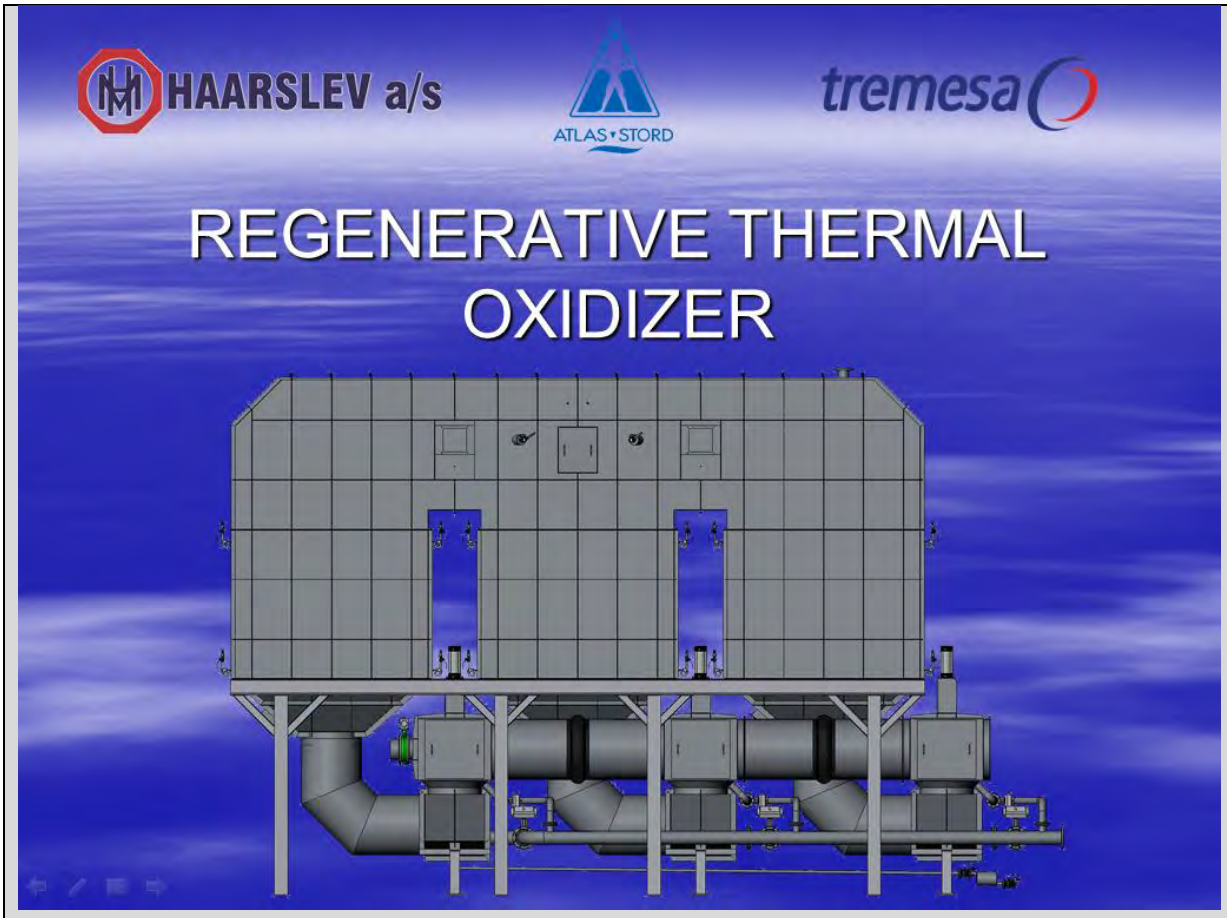


Figure 41: Regenerative Thermal Oxidiser (Haarslev, 2019)

Figure 42: Regenerative Thermal Oxidiser (Tremesa, 2019)

Figure 43: Proposed expansion layout

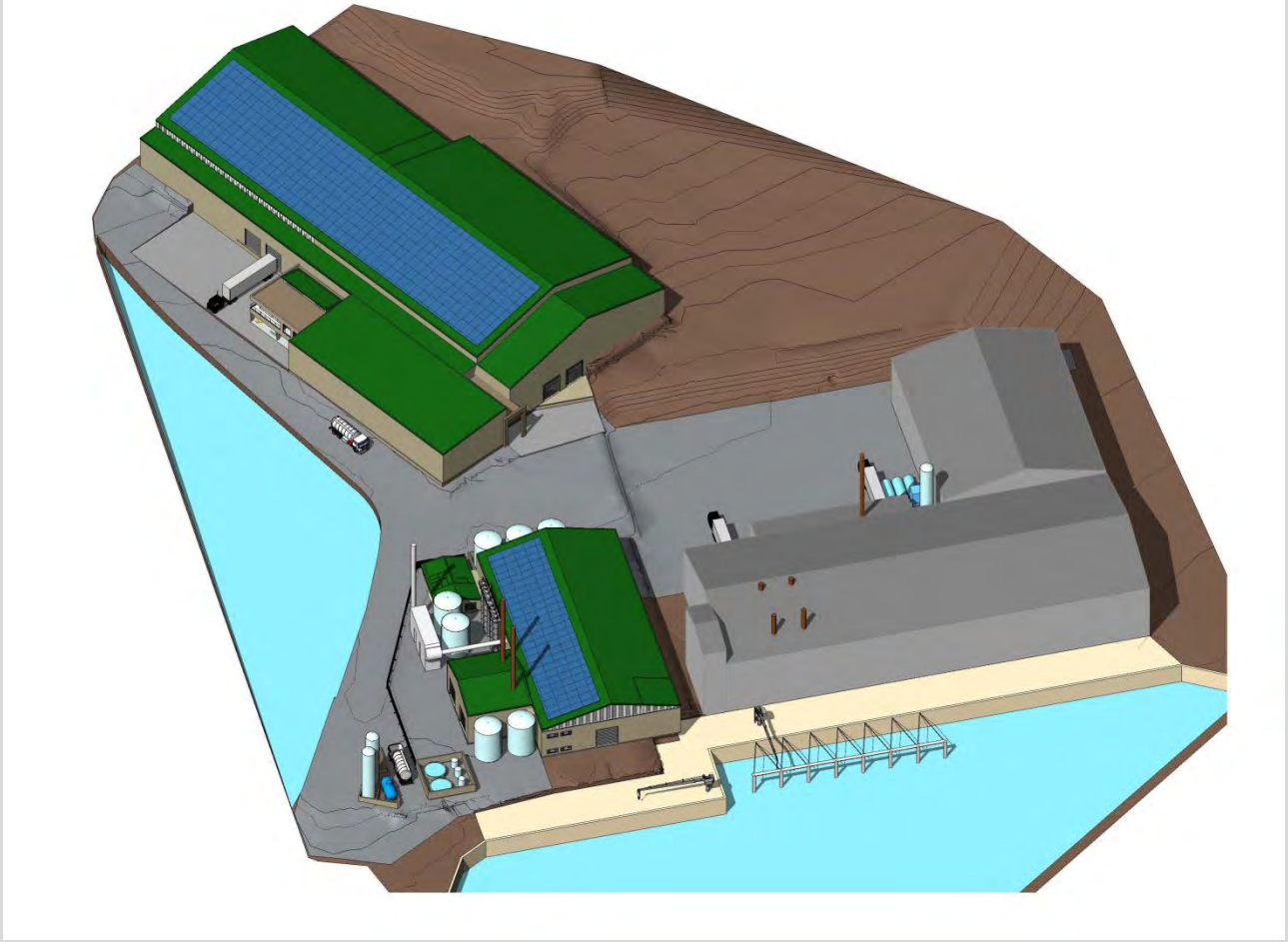


Figure 44: 3D Model of the existing facility and proposed expansion

SECTION F: ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE ALTERNATIVES

Note: The information in this section must be DUPLICATED for all the feasible and reasonable ALTERNATIVES.

1. DESCRIBE THE ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT AND ITS ALTERNATIVES, FOCUSING ON THE FOLLOWING:

(a) Geographical, geological and physical aspects:

None

(b) Ecological aspects:

Will the proposed development and its alternatives have an impact on CBAs or ESAs? *If yes, please explain:* *Also include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map.*	*YES*	*NO*
The site is located on Quay 2 of the Port of Mossel Bay which has been significantly transformed.		
Will the proposed development and its alternatives have an impact on terrestrial vegetation, or aquatic ecosystems (wetlands, estuaries or the coastline)? *If yes, please explain:*	~~*YES*~~	*NO*
The site is located on Quay 2 of the Port of Mossel Bay which has been significantly transformed.		
Will the proposed development and its alternatives have an impact on any populations of threatened plant or animal species, and/or on any habitat that may contain a unique signature of plant or animal species? *If yes, please explain:*	*YES*	*NO*
The site is located on Quay 2 of the Port of Mossel Bay which has been significantly transformed.		
Describe the manner in which any other biological aspects will be impacted:		
The site is located on Quay 2 of the Port of Mossel Bay which has been significantly transformed.		
Will the proposed development also trigger section 63 of the NEM: ICMA?	*YES*	~~*NO*~~
If yes, describe the following: *(i) the extent to which the applicant has in the past complied with similar authorisations;* *(ii) whether coastal public property, the coastal protection zone or coastal access land will be affected, and if so, the extent to which the proposed development proposal or listed activity is consistent with the purpose for establishing and protecting those areas;* *(iii) the estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives applicable in the area;* *(iv) the likely socio-economic impact if the listed activity is authorised or is not authorised;* *(v) the likely impact of coastal environmental processes on the proposed development;* *(vi) whether the development proposal or listed activity—* *(a) is situated within coastal public property and is inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations;* *(b) is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established as set out in section 17 of NEM: ICMA;* *(c) is situated within coastal access land and is inconsistent with the purpose for which coastal access land is designated as set out in section 18 of NEM: ICMA;* *(d) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated;* *(e) is likely to be significantly damaged or prejudiced by dynamic coastal processes;* *(f) would substantially prejudice the achievement of any coastal management objective; or* *(g) would be contrary to the interests of the whole community;* *(vii) whether the very nature of the proposed activity or development requires it to be located within coastal public property, the coastal protection zone or coastal access land;* *(viii) whether the proposed development will provide important services to the public when using coastal public property, the coastal protection zone, coastal access land or a coastal protected area; and* *(ix) the objects of NEM: ICMA, where applicable.*		

i. The applicant is currently in possession of a Coastal Waters Discharge Permit (CWDP) for the discharge of effluent into the Port of Mossel Bay and the sea. The facility abstracts seawater from outside the harbour for use in cleaning and chilling fish in the cannery. This washwater, along with seawater from the boat holds is then discharged to either of the two approved discharge locations (one inside the harbour and one outside the sea wall). The facility is monitored internally and externally to ensure compliance with the current permit and has not had any compliance directives against it.

ii. The proposed expansion will not affect coastal public property, the coastal protection zone or coastal access land as it will take place within the defined precinct of the Port of Mossel Bay.

iii. The proposed expansion will not affect nor be affected by any estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives due to its location within the defined precinct of the Port of Mossel Bay.

iv. Please see the Socio-Economic Impact Assessment included with this BAR.

v. The proposed expansion will not affect nor be affected by the coastal environmental processes due to the existing Port of Mossel Bay.

vi. Whether the development proposal or listed activity—

(a) is situated within coastal public property and is inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations;

No. The proposed expansion is not located in coastal public property.

(b) is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established as set out in section 17 of NEM: ICMA;

No. The proposed expansion is not located in the coastal protection zone.

(c) is situated within coastal access land and is inconsistent with the purpose for which coastal access land is designated as set out in section 18 of NEM: ICMA;

No. The proposed expansion is not located in coastal access land.

(d) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated;

No. The proposed expansion will not cause irreversible or long-lasting adverse effects to the coastal environment due to its location within the precinct of the Port of Mossel Bay.

(e) is likely to be significantly damaged or prejudiced by dynamic coastal processes;

No. The location within the precinct of the Port of Mossel Bay ensures that the facility will not be significantly damaged or prejudiced by dynamic coastal processes.

(f) would substantially prejudice the achievement of any coastal management objective;

No.

(g) would be contrary to the interests of the whole community;

The proposed expansion of the facility will not have an adverse affect on the community.

(c) Social and Economic aspects:

Please note that a detailed Socio-Economic Impact Assessment was undertaken for this proposal. Please refer to this document for the detailed breakdown of the expected incomes and expenditures.		
What is the expected capital value of the project on completion?	±R437 million	
What is the expected yearly income or contribution to the economy that will be generated by or as a result of the project?		
Will the project contribute to service infrastructure?	*YES*	~~*NO*~~
Is the project a public amenity?	~~*YES*~~	*NO*
How many new employment opportunities will be created during the development phase?	±95 – 118 per month	
Based on the different scenarios, the project could sustain 95 to 104 jobs per month on average (over the construction period of 3 years) in the Western, or 105 to 118 jobs per month on average if considered at the local (Mossel Bay) level (Mossel Bay has a lower GVA to employment levels). During operations, the project could initially (Year 1) create 456 jobs in the Mossel Bay area if productivity remained constant and increasing to 502 if external influences on demand are considered.		
What is the expected value of the employment opportunities during the development phase?	R	
What percentage of this will accrue to previously disadvantaged individuals?	%	
Socio-economic prescriptions have become a standard inclusion in the submission of development proposals to relevant government departments at local, provincial and national level, and in this context refer to socio-economic development contribution requirements of the Economic Development Scorecard. Afro Fishing adheres fully to the Enterprise and Supplier Development requirement and Socio-economic Development contributions stated in the Policy and 80% to the Enterprise Development in the terms of the Policy and by implication the BBBEE Code.		
How will this be ensured and monitored (please explain):		
Monitoring of employment will be done by means of salary records and tax records.		
How many permanent new employment opportunities will be created during the operational phase of the project?		
1 100 direct, indirect and induced jobs per annum on average could be sustained of which 560 are direct jobs.		
What is the expected current value of the employment opportunities during the first 10 years?	R	
During the construction phase, a combined initial investment of R437 million (R349,6 million net of the initial import leakage) will give rise to a multiplied increase in GVA of R3 845,6 million in the Western Cape Province. Based on the initial direct expenditure, a large propensity to import goods and services, and the contribution of the Mossel Bay area to the Western Cape Province, approximately R162,44 million will accrue to the area over and above the initial direct capital expenditure on these components. A forecast of the revenue over the 10 years once the facility is fully operational (less an estimated leakage) will give rise to a multiplied increase in GVA of R5 799,407 million in the Western Cape Province over the first 10 years of the project (with no assumption as to the estimated stabilising		

year). Based on the initial direct expenditure, a large propensity to import goods and services, and the contribution of Mossel Bay to the Western Cape Province, approximately R102,8 million will accrue to the area over and above the initial operational revenue. Note, the revenue figures used for these calculations are confidential.

What percentage of this will accrue to previously disadvantaged individuals?	%

Socio-economic prescriptions have become a standard inclusion in the submission of development proposals to relevant government departments at local, provincial and national level, and in this context refer to socio-economic development contribution requirements of the Economic Development Scorecard.

Afro Fishing adheres fully to the Enterprise and Supplier Development requirement and Socio-economic Development contributions stated in the Policy and 80% to the Enterprise Development in the terms of the Policy and by implication the BBBEE Code.

How will this be ensured and monitored (please explain):

Monitoring of employment will be done by means of salary records and tax records.

Any other information related to the manner in which the socio-economic aspects will be impacted:

Please refer to the detailed Socio-Economic Impact Assessment.

(d) Heritage and Cultural aspects:

None

2. WASTE AND EMISSIONS

(a) Waste (including effluent) management

Will the development proposal produce waste (including rubble) during the development phase?	*YES*	~~*NO*~~
If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type?	*See table below*	

The redevelopment of the site requires the demolition of the current old I&J buildings. All demolition material will be disposed of at authorised municipal dump sites.

The estimated volumes provided below has been provided by De Villiers Neethling & Partners quantity surveyors.

MOSSEL BAY PORT : AFRO FISHING

FISH MEAL SITE

Builders rubble foundations, floor, walls	m3	1547
Removal of roof covering	m2	1934
Removal steel /timber roofs	tonne	39
Take up parking surfaces	m3	600

COLD STORAGE SITE

Builders rubble foundations, floor, walls	m3	3447
Removal of roof covering	m2	4309
Removal steel /timber roofs	tonne	86
Take up parking surfaces	m3	271

Note: Estimated quantities not including any bulking factor

Figure 45: Rubble volumes (DNP Quantity Surveyors, 2019)

Will the development proposal produce waste during its operational phase?	*YES*	~~*NO*~~
If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type?	*±398m³ per annum*	

The facility will produce office waste and some domestic type waste. The majority of office waste can be recycled. According to the National Waste Information Baseline Report (2012) Fiehn and Ball (2005) estimated per capita waste generation in the Western Cape as 675kg per year or 1.85kg per day. Based on this figure and a maximum estimate of 502 pax in both factories for any given 12 hour shift, there will be a generation of ±928kg per day or 338 850kg per year.

Refuse removal will be handled by Mossel Bay Municipality as per standard service.

Some industrial waste such as oil from machinery as is currently generated by the cannery will be produced. These volumes are very low and intermittent and must be dealt with on an ad hoc basis.

Will the development proposal require waste to be treated / disposed of on site?	~~*YES*~~	*NO*
If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of?		*m³*
If no, where and how will the waste be treated / disposed of? Please explain. *Indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of?*		*m³*

Any waste generated by the expanded facility will be disposed of via the municipal waste stream for office and domestic waste. The municipality has communicated with the engineers that they will continue with normal refuse refusal as is currently undertaken.

Has the municipality or relevant authority confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? *If yes, provide written confirmation from the municipality or relevant authority.*	*YES*	~~*NO*~~
Will the development proposal produce waste that will be treated and/or disposed of at another facility other than into a municipal waste stream?	~~*YES*~~	*NO*

~~*If yes, has this facility confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal?*~~ ~~*Provide written confirmation from the facility.*~~	~~*YES*~~	~~*NO*~~
~~*Does the facility have an operating license? (If yes, please attach a copy of the licence.)*~~	~~*YES*~~	~~*NO*~~

~~*Facility name:*~~	
~~*Contact person:*~~	
~~*Cell:*~~	~~*Postal address:*~~
~~*Telephone:*~~	~~*Postal code:*~~
~~*Fax:*~~	~~*E-mail:*~~

Describe the measures that will be taken to reduce, reuse or recycle waste:

Recycling of general waste should be encouraged by providing adequate recycling bins.

(b) Emissions into the atmosphere

Will the development proposal produce emissions that will be released into the atmosphere?	*YES*	~~*NO*~~
If yes, does this require approval in terms of relevant legislation?	*YES*	~~*NO*~~
If yes, what is the approximate volume(s) of emissions released into the atmosphere?		*m³*

Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated:

An Air Quality Impact Assessment has been undertaken for this proposal. Please refer to the report included as Annexure G1 of this BAR for the full information. The information provided below is an extract of the AQIA.

A flow chart of the complete process is given below. From the flow chart it can be seen that an extraction system will extract gaseous odours from all of the processing steps in the fishmeal generation process, i.e.:

- Fish collection tanks
- Crusher feed bin
- Cooker feed bins and cooker outlets
- Rotating strainers
- Press inlets and outlets
- Decanters
- All liquid tanks (press water, decanter water, stick water, concentrate, etc.)
- All wet conveying conveyors
- Drier non-condensable gases

All of these process units will be enclosed in Afro Fishing's operation and, because of the extraction system, under negative pressure, thus preventing the escape of odorous gases into the working environment (inside the building) and, hence to atmosphere as fugitive emissions.

The extracted gases will be ducted directly to the RTO unit via filter in which entrained particulate matter will be collected. It is of paramount importance that this extraction system is properly designed and that the RTO unit is sized to the total gas volume extracted.

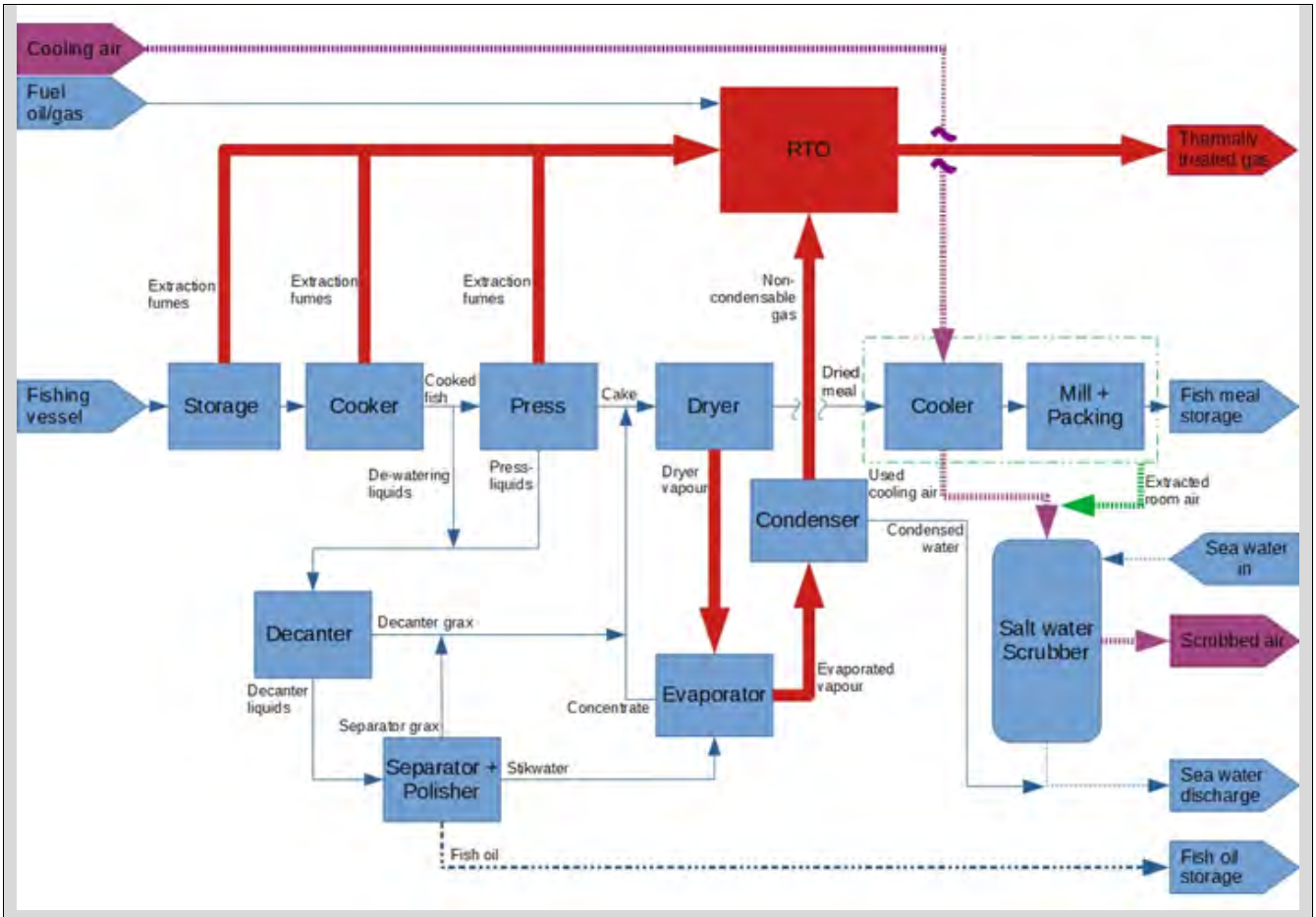


Figure 46: Process Flow Diagram (LAQS, 2019)

At any given moment, the extracted gases pass through one of three beds of ceramic materials in which the gas stream is pre-heated. In the process this bed of ceramic materials cools down.

The gas stream then passes through an open LPG-fired flame in which it is heated to about 850 ºC after which the gas stream is split prior to passing through two beds of ceramic materials which are heated in the process.

When the temperature of the first bed drops below a set point, a valve switches the inflowing gas stream through the hottest of the remaining two ceramic beds where the gas stream is pre-heated. After the gas burner the gas stream is split to now also flow through the cooled ceramic bed, thus heating it up again.

In this process the extracted gas stream is always pre-heated, passes through an open flame and is exhausted from the RTO unit through two beds of hot ceramic materials. The retention time of the gas in the hot zone of the RTO is approximately 1.5 seconds.

The flame zone and hot ceramic surfaces act as energy source and catalysts in breaking down TMA and H_2S to its basic organic compounds of CO_2, NO_2, H_2O and SO_2.

After passing through the RTO unit the gases are exhausted to atmosphere through a stack at approximately 120 ºC by means of an induced-draught (ID) fan. It is important to note that odorous gases cannot escape in the process and must pass through the RTO system, thus preventing odorous fugitive emissions.

The second odour control step is as follows:

From the process description above it can be derived that the fishmeal is hot after the drying stage. Up to that point the process steps are best described as "wet" steps that all have the potential to generate odours. These odours are, however, extracted and treated in the RTO system

The dry fishmeal at this stage is too hot for packaging and it will be cooled down by means of an air cooler using ambient air as cooling medium. This will occur in a separate enclosed area where the fishmeal will also pass through a grinding process to reduce particle size. In the process particulate emissions may occur, resulting in odours similar to pet foods.

To reduce these odours, a seawater scrubber will be used to remove particulates entrained during the cooling and grinding stage. The scrubber will be over-designed so that the air from the whole area is also extracted and treated to remove suspended particulates, thus assisting in the ventilation of the building.

Collected solids will be discharged to the sea and will occur within the current coastal discharge permit.

3. WATER USE

(a) Indicate the source(s) of water for the development proposal by highlighting the appropriate box(es).

Municipal	~~*Water board*~~	~~*Groundwater*~~	~~*River, Stream, Dam or Lake*~~	*Other*	~~*The project will not use water*~~
Seawater taken from the existing cannery abstraction will continue to be used for cooling and scrubbing.					

Note: Provide proof of assurance of water supply (e.g. Letter of confirmation from the municipality / water user associations, yield of borehole)

~~*(b) If water is to be extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:*~~		~~m^3~~

(c) Does the development proposal require a water use permit / license from DWS?	~~*YES*~~	*NO*
~~*If yes, please submit the necessary application to the DWS and attach proof thereof to this application as an Appendix.*~~		

(d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water:

Potable water is supplied to the existing Afro Fishing facility and was supplied to the old I&J facilities via existing connections to the Municipal network in Bland Street. (See Annexure A).

No upgrade of these connections are envisaged.

The Mossel Bay Municipality confirmed that enough water is available in their existing water system. Official letter to follow.

Water savings should be implemented in the factory to manage their overall use. The following can be implemented:

- Rainwater harvesting.
- Geysers must be fitted with insulation jackets to minimise water being wasted while waiting for hot water. If the geysers are a distance away from the usage area, either a secondary heating mechanism must be placed in line or the water must captured by means of a heat sensitive valve that pipes it to a holding tank for later re-use.
- Water for generalised washing should be pressurised. Some pressurised washing equipment has a compressed air stream at the nozzle exit.
- All hoses should be fitted with self-closing nozzles or pistol grips to prevent water wastage when not in use.
- All taps used for personnel hygiene should be low flow nozzles with automatic cut off or foot operated mechanisms.
- Water monitoring should take place daily.

- Water saving information / education must be available to personnel.
- Recycled water mechanisms could be introduced for use in the work areas. E.g. Steriliser and hand-wash / boot wash water collected and used to wash work areas, process water can be chlorinated, UV irradiated or heated to be re-used for primary processing.

4. POWER SUPPLY

(a) Describe the source of power e.g. municipality / Eskom / renewable energy source.

Mossel Bay Municipality

(b) If power supply is not available, where will power be sourced?

The total electrical loading for the plant configuration envisaged is 4000kVA.

Fish meal plant	2800kVA
Cold room/freezing	1200kVA

The following power is available onsite:

Surplus from Afro 1 (existing cannery)	800kVA
Existing I&J MS630	500kVA
I&J 2x500kVA	800kVA
TOTAL	2100kVA
REQUIRED	1900kVA

As the project will be phased, there will be enough power available to cope with phase 1, namely the installation of fish offloading facilities, boiler house and one fishmeal production line only. In year 2, when the second production line is installed and work commences with the cold room and freezing facility, the electrical infrastructure will have to be upgraded. Mossel Bay Municipality Technical Services have already been consulted with regarding the increase in bulk supply that will be needed from year 2 of the project.

Discussions are underway with Technical Services, Mossel Bay Municipality w.r.t. the required SLA to upgrade the bulk supply to the required 4000kVA. Load planning require the installation of 2 x 185mm2 PILC 11kV cables from the South S/S to Bland Street S/S and 2 x 120mm2 cables from Bland Street S/S to the Afro Fishing MV metering point.

5. ENERGY EFFICIENCY

(a) Describe the design measures, if any, that have been taken to ensure that the development proposal will be energy efficient:

The biggest energy consumer of the planned expansion will be the fish meal plant. To save energy and a solar power system will be installed on the new roofs.

(b) Describe how alternative energy sources have been taken into account or been built into the design of the project, if any:

The RTO system consists of three canisters filled with a ceramic material which recovers heat energy from the oxidation process. A combustion chamber interconnects the three vertical canisters. It is here the oxidation process takes place. A specially designed low energy burner maintains the combustion chamber temperature at a minimum of 850 deg C.

The complete unit is insulated to prevent heat losses and has a thermal efficiency of 94%.

The factory will ensure that energy efficient equipment is installed and that heat losses are minimised

with the use of insulation and cladding.

Roof top solar pv panels producing up to 1MW energy will be used on the processing and warehouse roofs to further minimise use of electricity and provide secure power in the building.

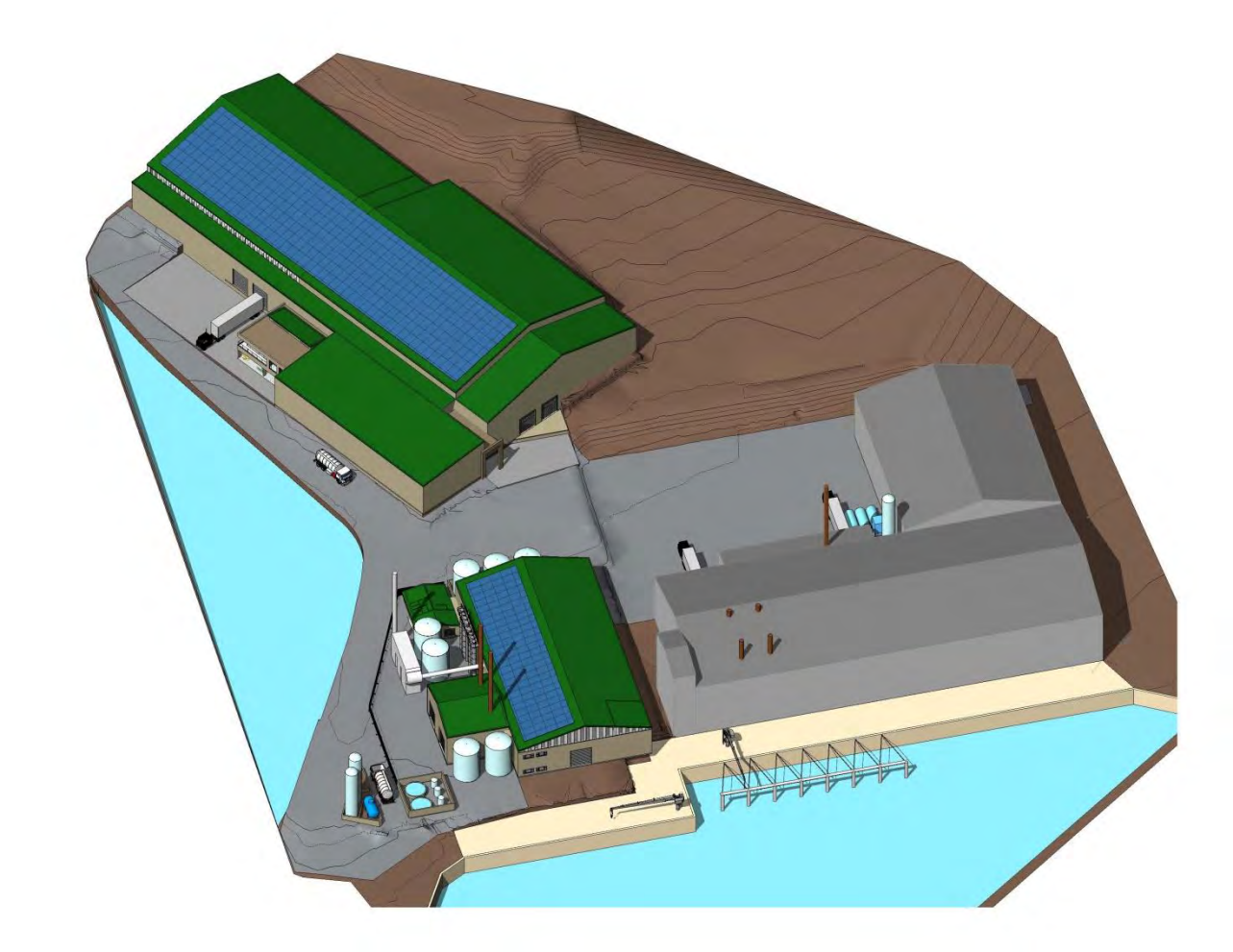


Figure 47: 3D Model of the existing facility and proposed expansion

6. TRANSPORT, TRAFFIC AND ACCESS

Describe the impacts in terms of transport, traffic and access.

A Traffic Impact Assessment was undertaken for the proposal. Please see Annexure G3 of the BAR for the full details.

Mossel Bay Harbour is a very important and strategic transportation and commercial node within the Southern Cape. In terms of freight volumes, it is currently one of the smallest harbours within the Transnet National Ports Authority's (TNPA) network. The harbour is currently operating at approximately 10% of its capacity in terms of Break Bulk and 20% of capacity in terms of Liquid Bulk.

It is expected that the recent finding of oil condensate within the Southern Cape offshore region, will expedite the future long-term planning for Mossel Bay Harbour. Long Terms planning for the harbour includes expanding the harbour's import/export capabilities.

Mossel Bay Central Business District is the economic hub of Mossel Bay. It is important that traffic within the Central Business District is managed and optimized to limit transportation related delays.

The existing Afro Fishing Cannery is the ideal harbour business from a transportation impact point of view. Raw materials (fish) are delivered to the facility directly from fishing ships and trawlers,

minimizing the impact on the surrounding road network.

The proposed Fish Meal and Oil Reduction facility is also expected to have a very low impact on the surrounding road network, since the proposed facility is expected to generate very low volumes of vehicular and truck traffic. The expected trip generation rate of the facility is very low, leading to an increase in job opportunities without negatively affecting the road network.

Both the existing Cannery and the new proposed facility will be closed during the summer holiday season, when the influx of visitors to the Mossel bay region, leads to increased pressure on the road network.

7. NUISANCE FACTOR (NOISE, ODOUR, ETC.)

Describe the potential nuisance factor or impacts in terms of noise and odours.

Noise & Dust:

Some noise and dust is expected during the decommissioning of the old I&J facility as well as for the construction of the new facility. This will be for a short period of time and will be specific to the immediate area. Mitigation can be implemented to manage some of this impact. Once the facility is operational, noise impacts are expected to be very low, in keeping with the working of a port.

Dust or particulate matter from the fishmeal packing and storage areas will be collected in the building and ducted to seawater scrubbers.

Odour:

No official emission limits have been defined for animal matter processing in NEM:AQA GN893. The only requirement is:

Best practice measures intended to minimise or avoid odours must be implemented by all installations. These measures must be documented to the satisfaction of the Licensing Authority.

It is generally accepted that odorous emissions, while not necessarily hazardous, are a cause for complaints from nearby receptors.

Based on the overestimated annual operating cycle and the measured emission from two similar plant in Europe, LAQS concludes that it is possible to operate a modern fishmeal production plant in a manner than does not result in odorous emissions to the point where odours can be detected in the area surrounding the plant.

In fact, the maximum 99-percentile concentration estimated anywhere in the surrounding area is 135.5 ng/m^3 which is substantially lower than the odour threshold of 800 ng/m^3 (0.8 µg/m^3) used by LAQS in this assessment.

It implies that TMA emissions can increase from the measured TMA concentration of 712 µg/m^3 (0.712 mg/m^3) to approximately 4.2 mg/m^3 before the 99-percentile concentration will be exceeded. This calculated maximum value compares well with the emission limit of 5 mg/m^3 imposed on such plants in France and Switzerland.

If the European TMA odour threshold value of 2 µg/m^3 is used as measure, the TMA emissions can increase to 10.5 mg/m^3 before the European odour threshold limit will be breached.

Apart from the impact of odorous emissions, the dispersion model estimates that none of the other emissions threaten exceedance of the official air quality standards set for PM10 particulates, SO_2, NO_2 and CO.

Note: Include impacts that the surrounding environment will have on the proposed development.

8. OTHER

None.

SECTION G: IMPACT ASSESSMENT, IMPACT AVOIDANCE, MANAGEMENT, MITIGATION AND MONITORING MEASURES

1. METHODOLOGY USED IN DETERMINING AND RANKING ENVIRONMENTAL IMPACTS AND RISKS ASSOCIATED WITH THE ALTERNATIVES

(a) Describe the methodology used in determining and ranking the nature, significance consequences, extent, duration and probability of potential environmental impacts and risks associated with the proposed development and alternatives.

Criteria for Assessment

These criteria are drawn from the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989.

These criteria include:

- Nature of the impact

This is the appraisal of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

- Extent of the impact

Describe whether the impact will be: local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region, or will have an impact on a national scale or across international borders.

- Duration of the impact

The specialist / EAP should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long term (16-30 years) or permanent.

- Intensity

The specialist / EAP should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The study must attempt to quantify the magnitude of the impacts and outline the rationale used.

- Probability of occurrence

The specialist / EAP should describe the probability of the impact actually occurring and should be described as improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures).

The impacts should also be assessed in terms of the following aspects:

- Legal requirements

The specialist / EAP should identify and list the relevant South African legislation and permit requirements pertaining to the development proposals. He / she should provide reference to the procedures required to obtain permits and describe whether the development proposals contravene the applicable legislation.

- Status of the impact

The specialist / EAP should determine whether the impacts are negative, positive or neutral ("cost – benefit" analysis). The impacts are to be assessed in terms of their effect on the project and the environment. For example, an impact that is positive for the proposed development may be negative for the environment. It is important that this distinction is made in the analysis.

- Accumulative impact

Consideration must be given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts must be evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact.

- Degree of confidence in predictions

The specialist / EAP should state what degree of confidence (low, medium or high) is there in the predictions based on the available information and level of knowledge and expertise.

Based on a synthesis of the information contained in the above-described procedure, you are required to assess the potential impacts in terms of the following significance criteria:

No significance: the impacts do not influence the proposed development and/or environment in any way.

Low significance: the impacts will have a minor influence on the proposed development and/or environment. These impacts require some attention to modification of the project design where possible, or alternative mitigation.

Moderate significance: the impacts will have a moderate influence on the proposed development and/or environment. The impact can be ameliorated by a modification in the project design or implementation of effective mitigation measures.

High significance: the impacts will have a major influence on the proposed development and/or environment and will result in the "no-go" option on the development or portions of the development regardless of any mitigation measures that could be implemented. This level of significance must be well motivated.

Specialist Air Quality Assessment Criteria for Assessment

LAQS used the rating system shown in Figure 29 below to attach a risk to air quality as a result of emissions from Afro Fishing's operations:

Likelihood of occurrence:

Frequency of activity: Daily, i.e. score = 1

Frequency of impact: Almost never, i.e. score = 1

Confidence: High, i.e. score = 2

Total score for likelihood of occurrence: 4

Consequence:

Severity: small, i.e. score = 1

Spatial scope: Impact is specific to fishmeal production activity, i.e. score = 1

Duration: Life of operation, i.e. score = 4

Total score for consequence: 6

The overall score, i.e. likelihood x consequence, is 24 which places the potential risk in the "**very low**" category.

SPATIAL SCOPE	RATING	DURATION	RATING	SEVERITY	RATING	Confidence	RATING
Activity Specific	1	1 day to 1 month	1	Insignificant	1	Absolute	1
Area Specific	2	1 month to 1 year	2	Small	2	High	2
Whole Site / Plant	3	1 year to 5 years	3	Significant	3	Moderate	3
Neighbouring Area	4	Life of operation	4	High	4	Low	4
Regional Area	5	Permanent	5	Disastrous	5	None	5

FREQUENCY OF ACTIVITY	RATING	FREQUENCY OF IMPACT	RATING
Annually or less	1	Almost never / Almost impossible	1
6 monthly	2	Very seldom / highly unlikely	2
Monthly	3	Infrequent / unlikely / seldom	3
Weekly	4	Often / regularly / likely / possible	4
Daily	5	Daily / highly likely / definitely	5

SIGNIFICANCE RATING OF IMPACT			TIMING
Very Low	1 to 25		Pre- Construction / prior to activity
Low	31 to 50		Construction / instillation
Medium – Low	51 to 75		Operation / Activity
Medium– High	76 to 100		
High	101 to 125		
Very High	126 to 150		

CONSEQUENCE
(= Severity + special scope + duration)

LIKELY HOOD (= frequency of activity + frequency of impact + confidence)															
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
4	4	8	12	16	20	24	28	32	36	40	44	48	57	56	60
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

Figure 48: Risk Assessment Ratings Table (LAQS, 2019)

(b) Please describe any gaps in knowledge.

- The wind and temperature data provided by the Garden Route District Municipality is comprehensive and only a few minor gaps exist in the data set. It is, therefore, regarded as a reliable meteorological data set.

(c) Please describe the underlying assumptions.

- It is assumed that the information on which this report is based (specialist studies and project information, as well as existing information) is correct, factual and truthful.
- It is also assumed that all the relevant mitigation measures and agreements specified in this report will be implemented in order to ensure minimal negative impacts and maximum environmental benefits.
- It is assumed that Stakeholders and Interested and Affected Parties notified during the public participation process will submit all relevant comments within the designated 30-days review and comment period, so that these can included in the Final BAR can be timeously submitted to the delegated Authority, the Department Environmental Affairs for consideration.

LAQS Assumptions:

LAQS made use of design data and measured TMA concentrations to estimate emissions from the fishmeal processing plant. Use was made of USEPA emission factors to estimate emissions from the two new LSO boilers.

As a result there is a degree of uncertainty in the estimated emissions used in this study.

- LAQS assumed that the measured TMA emissions reported in Section 7.2.2 of the AQI will also apply the Afro Fishing's plant.

- LAQS assumed that the H_2S emission factor given by AP-42 is correct and based its calculation of total annual H_2S emissions on the basis that Afro Fishing processes fresh fish scrap material only.
- LAQS focused on odorous emission from Afro Fishing's operations only. Other sources of odorous gases may exist within the Mossel Bay harbour precinct as it is a commercial harbour. These sources may be small, they were not included in this study, although their localised emission may result in odours from time-to-time that cannot be connected to Afro-Fishing's operations.
- The volume of gas generated in the combustion of any fuel is dependent on the composition of that fuel, its combustion rate, the completeness of combustion and the quantity of excess air introduced to the combustion zone.
- LAQS based its calculations on the expected combustion rate of LSO of 1.92 tons per hour as obtained from Afro Fishing's mass balance. The calculated volumes will, therefore, vary as fuel composition combustion rate changes.
- LAQS assumed the flue gas conditions, i.e. velocity and temperature, for the boiler stacks, based on its experience with boilers in general. LAQS assumed a typical stack height of 15 metres. Lower stacks will result in less time for dispersion of pollutants and will result in higher maximum ground-level concentration closer to the source. Taller stacks will have in opposite effect, i.e. lower maximum ground-level concentrations further from the source.

All of the emissions on which this study is based must be regarded as worst-case conditions due to the following reasons:

- LAQS assumed that Afro Fishing's processes to its maximum planned capacity, i.e. processing 1 000 tons per day of fresh fish, burning 1.92 tons of LSO per hour, operating for 24 hours per day and for 330 days per year. This is the worst-case that is expected to occur as the production of fishmeal from industrial fish is directly related to the availability of such fish.

  This is not sustainable as it makes no provision for regular process interruptions for essential hygiene control measures.
- As is normal, an over-design factor has been included by the vendors to allow for some spare capacity. LAQS based all of its estimations on the maximum design capacities, thus overestimating emissions.
- Suffice to state that there is a linear relationship between emissions and ground-level concentrations in the sense that any change in emission will result in an equal change in ground-level concentrations, i.e. halving the emission will result in halving the ground-level concentrations.
- Afro Fishing will operate the fishmeal production process according to the rate at which fish is caught by the fishing fleet. If there is no consistency in the catch rate there will not be consistency in the fishmeal processing rate. Due to the expected variability of fish deliveries, there is no expected trend in operations that can be defined clearly with the result no seasonal variation in emissions can be defined in the dispersion model. LAQS assumed, therefore, that processing will occur continuously as if a supply of fish will be available accordingly.
- Industry generally schedules a period during the operation year for routine maintenance. The planned annual shutdown is during December and no processing of fish will occur during this period. Annually renewed fishing licenses are issued in January which implies that there is very little chance that processing will commence before the middle of the month. It is more likely that full production will only commence in February.

MPBS Assumptions:

The following assumptions were introduced to perform calculations related to employment and economic income:

- The operations are assessed over a period of 10 years;
- Productivity stays constant and the additional labour demand follows the long-term linear trend of employment per Rand Million of Gross Value Added considered from 1995;
- Labour productivity increases per annum and labour demand therefore increases by 0.90 using the annual linear trend;
- Labour demand is forced to increase by 1.1 above the long-term trend, which is caused by external influences;
- Only total labour demand is considered; no race, gender or skill level is considered; and
- An assumed import leakage for construction and operations.

Urban Engineering Assumptions:

- Based on visual observations, it was assumed that parking facilities in the Mossel Bay CBD were occupied between 60% and 100%. Parking bays at popular venues had a higher occupancy rate.

(d) Please describe the uncertainties.

- The use of actual TMA data from existing plant corroborates the estimations previously presented.

LAQS Limitations:

- The wind and temperature data provided by the Garden Route District Municipality is comprehensive and only a few minor gaps exist in the data set. It is, therefore, regarded as a reliable meteorological data set.
- Actual fishing volumes and seasons cannot be accurately predicted and as such all assumptions are based on full production / catch quotas to provide a conservative approach.

MPBS Limitations:

Several limitations were identified during the study:

- Changes in methodology complicate comparisons between the 2011 and 2001 National Census years, with specific reference to the analysis of employment by economic sector and occupation. No data is available to assess sector employment and occupation levels for 2011.
- A comparison between the population figures for the 2001 Census, 2007 Community Survey, 2011 Census and 2016 Community Survey is not possible since the Community Surveys only selected a sample of the community and extrapolated the data to the whole population. A significantly larger margin of error would be prevalent when adopting a sample approach vs. a census that covers the entire population.
- Different categories were considered for various demographic items in the Census 2011 survey, which hampers any form of comparative assessment with the 2001 Census.
- Due to the lack of detailed information related to the contribution of economic sub-sectors to the local Municipal economy, it is not possible to conduct an analysis that would provide further insight into the backward and forward linkages between sub-sectors at the local level.

- The most recent employment data for 2011 was available, but due to the reclassification of employment categories in the 2011 Census, no comparative assessment with the 2007 and 2016 Community Surveys and 2001 Census Survey is possible. In addition, the data provided in terms of reports prepared by Statistics SA and the data extracted from a detailed assessment of enumeration areas and sub-places, do not correspond or are missing. An example of such data is the unemployment numbers for the local Municipality.
- No research or data on the contribution of the tourism industry to the local Mossel Bay economy is available, and it is therefore impossible to quantify the potential economic impact of a decline in tourism activity.
- No information on the number of employees linked to the tourism industry in Mossel Bay is available. It is therefore impossible to quantify the potential impact of a decline in tourism employment.

(e) Describe adequacy of the assessment methods used.

- The assessment was undertaken using national and international criteria for air quality assessment and its adequacy is of a high standard.
- The wind and temperature data provided by the Garden Route District Municipality is comprehensive and only a few minor gaps exist in the data set. It is, therefore, regarded as a reliable meteorological data set.
- The distribution of winds at the monitoring station located in Mossdustria is shown graphically. It shows that the predominant wind directions are easterly and westerly, which implies that pollutants will disperse mainly in these two directions from the sources included in this study.
- The use of actual TMA data from existing plant corroborates the estimations previously presented.

2. IDENTIFICATION, ASSESSMENT AND RANKING OF IMPACTS TO REACH THE PROPOSED ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE WITHIN THE SITE

Note: In this section the focus is on the identified issues, impacts and risks that influenced the identification of the alternatives. This includes how aspects of the receiving environment have influenced the selection.

(a) List the identified impacts and risks for each alternative.

Alternative 1:	The following impacts may occur: • Odour (-ve) very low • Noise (-ve) low • Socio-economic (-ve) low to medium, (+ve) medium • Traffic (-ve) very low
Alternative 2:	
No-go Alternative:	The following impacts may occur: • Odour (-ve) very low • Noise (-ve) low • Socio-economic (-ve)

(b) Describe the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed; may cause irreplaceable loss of resources; and can be avoided, managed or mitigated.

The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. (The EAP has to select the relevant impacts identified in blue in the table below for each alternative and repeat the table for each impact and risk).

Odour		
PLANNING, DESIGN AND DEVELOPMENT PHASE	*Alternative 1 :*	*No Go*
Potential impact and risk:	None	None
Nature of impact:	None	Existing odour associated with current industries in the Port of Mossel Bay.
Extent and duration of impact:	None	Site specific
Consequence of impact or risk:	None	None
Probability of occurrence:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Degree to which the impact can be reversed:	None	None
Indirect impacts:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be avoided:	None	None
Degree to which the impact can be managed:	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Residual impacts:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	None	None
OPERATIONAL PHASE		
Potential impact and risk:	Nuisance odours caused by processing of fish to produce fishmeal	Nuisance odours
Nature of impact:	Nuisance Odours	Existing odour associated with current industries in the Port of Mossel Bay.
Extent and duration of impact:	Site Specific Discontinuous or intermittent	Site Specific Discontinuous or intermittent
Consequence of impact or risk:	Low	Low
Probability of occurrence:	Low	Low
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Degree to which the impact can be reversed:	Low	None
Indirect impacts:	Medium	None
Cumulative impact prior to mitigation:	Low	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	None
Degree to which the impact can be avoided:	Low	None

Degree to which the impact can be managed:	Medium	None
Degree to which the impact can be mitigated:	High	None
Proposed mitigation:	Implement RTO in the processing facility. Use fresh material in the facility. All process equipment in the fishmeal plant is cleaned and sanitised at regular intervals to minimise the formation of odours between production runs. Preventative maintenance program is designed and implemented with the assistance of the preferred technology supplier to ensure that the equipment operates at optimum conditions. Extraction system that gather fumes from the various process steps must be designed properly to ensure that the correct volume of air is extracted from each point. A formal maintenance procedure and schedule is developed for the RTO and this schedule meets the requirements of the equipment supplier. Supervisory personnel in charge of the operation of the fishmeal plant receive thorough training in the operation and maintenance of the process, especially the RTO, to ensure that breakdowns and kept to a minimum and that fault diagnosis and correction can be achieved in the shortest period of time.	None
Residual impacts:	Odour Management Practice in the EMPr and	None

	the specialist report	
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low	None
DECOMMISSIONING AND CLOSURE PHASE		
The facility has an expected lifespan of more than 20 years with the modernisation. The demand for fish products is not likely to cease and effective, efficient processes are necessary. As such it is not possible to foresee the closure of the facility in the near future. The requirements for closure must comply with any legislative mechanisms in place at the time of closure as a minimum.		
Potential impact and risk:	None	None
Nature of impact:	None	None
Extent and duration of impact:	None	None
Consequence of impact or risk:	None	None
Probability of occurrence:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Degree to which the impact can be reversed:	None	None
Indirect impacts:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be avoided:	None	None
Degree to which the impact can be managed:	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Residual impacts:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	None	None

Noise		
PLANNING, DESIGN AND DEVELOPMENT PHASE	*Alternative 1 :*	*No Go*
Potential impact and risk:	Nuisance noise during office hours for adjacent users	None
Nature of impact:	Noise during decommissioning of the old I&J facility.	Existing noises associated with the Port of Mossel Bay.
Extent and duration of impact:	Site specific Short term	None
Consequence of impact or risk:	Low	None

Probability of occurrence:	Probable	None
Degree to which the impact may cause irreplaceable loss of resources:	Low	None
Degree to which the impact can be reversed:	High	None
Indirect impacts:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	None
Degree to which the impact can be avoided:	Low	None
Degree to which the impact can be managed:	Medium	None
Degree to which the impact can be mitigated:	Medium	None
Proposed mitigation:	Work hours to be restricted to normal working hours. Vehicles to be maintained and have bafflers See EMPR for further noise management strategies.	None
Residual impacts:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium Low	None
OPERATIONAL PHASE		
Potential impact and risk:	Nuisance noise during office hours for adjacent users	None
Nature of impact:	Noise during construction of the new facility.	Existing noises associated with the Port of Mossel Bay.
Extent and duration of impact:	Site specific Short term	None
Consequence of impact or risk:	Low	None
Probability of occurrence:	Probable	None
Degree to which the impact may cause irreplaceable loss of resources:	Low	None
Degree to which the impact can be reversed:	High	None
Indirect impacts:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	None
Degree to which the impact can be avoided:	Low	None

Degree to which the impact can be managed:	Medium	None
Degree to which the impact can be mitigated:	Medium	None
Proposed mitigation:	Work hours to be restricted to normal working hours. Vehicles to be maintained and have bafflers See EMPR for further noise management strategies.	None
Residual impacts:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium Low	None
DECOMMISSIONING AND CLOSURE PHASE		
The facility has an expected lifespan of more than 20 years with the modernisation. The demand for fish products is not likely to cease and effective, efficient processes are necessary. As such it is not possible to foresee the closure of the facility in the near future. The requirements for closure must comply with any legislative mechanisms in place at the time of closure as a minimum.		
Potential impact and risk:	Nuisance noise if any demolitions takes place	None
Nature of impact:	Noise During decommissioning	Existing noises associated with the Port of Mossel Bay.
Extent and duration of impact:	Site Specific Very Short Term	None
Consequence of impact or risk:	Low	None
Probability of occurrence:	Unknown	None
Degree to which the impact may cause irreplaceable loss of resources:	Low	None
Degree to which the impact can be reversed:	Low	None
Indirect impacts:	Low	None
Cumulative impact prior to mitigation:	Low	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	None
Degree to which the impact can be avoided:	Low	None
Degree to which the impact can be managed:	High	None
Degree to which the impact can be mitigated:	Medium	None
Proposed mitigation:	See Section 7 of the EMPr	None
Residual impacts:	Unknown	None
Cumulative impact post mitigation:	Unknown	None

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	None

Socio-Economic		
PLANNING, DESIGN AND DEVELOPMENT PHASE		

Traffic flows along access routes

The movement of large construction and related vehicles will affect traffic flows along access routes.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	6	2	2	1	1	5	60	M (-)	M-H (-)	4	2	2	1	1	5	50	M (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Nuisance factors (dust and noise)

Construction activities will create dust and noise that could affect nearby receptors.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	6	2	2	0	1	5	55	M (-)	M (-)	4	3	2	0	1	5	50	M (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Influx of job-seekers

An influx of job-seekers may lead to competition with local residents for employment opportunities.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	6	2	2	0	1	4	44	M (-)	M (-)	4	3	2	0	1	4	40	M (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Local crime

The presence of construction workers may increase the risk of criminal activities in the surrounding area.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	4	2	2	1	1	3	30	L (-)	L (-)	2	3	2	1	1	3	27	L (-)	L (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Temporary employment opportunities

Temporary employment opportunities for people with different types and levels of skills will be created.

PROJECT DESCRIPTION	ENVIRONMENTAL SIGNIFICANCE																	
	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	8	2	3	0	0	5	65	M-H (+)	H (+)									
No-Go	-	-	-	-	-	-	-	-	-									

Contribution towards local economic income

The Mossel Bay and Western Cape economies will benefit from the project due to the procurement of goods and services and the spending of wages and salaries.

PROJECT DESCRIPTION	ENVIRONMENTAL SIGNIFICANCE																	
	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	8	2	3	0	0	5	65	M-H (+)	H (+)									
No-Go	-	-	-	-	-	-	-	-	-									

OPERATIONAL PHASE

Sense of place (visual impact, small harbour character)

The proposed development could affect the sense of place for nearby residents and businesses.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	6	5	2	1	1	5	75	M-H (-)	H (-)	2	5	2	1	1	5	55	M (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Nuisance factors (malodours, noise and human well-being)

Operational activities at the fish meal factory may create foul odours, noise and other nuisance factors that could affect nearby receptors.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	10	5	2	1	1	5	95	M-H (-)	H (-)	2	5	2	1	1	4	44	M (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Traffic flows along access routes

An increase in processing capacity will generate additional traffic along the access routes.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	4	2	2	1	1	4	40	M (-)	M (-)	3	2	2	1	1	3	27	L (-)	L (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Pollution of the Mossel Bay Harbour

The proposed activities may result in the discharge of organic matter in the ocean that may pollute the harbour.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	6	5	3	2	2	4	72	M (-)	M-H (-)	2	5	2	2	2	2	39	L (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Bulk infrastructure requirements/contributions

Bulk Infrastructure is required for sewerage, water and electricity supply, as well as solid waste disposal and storm water management.

PROJECT DESCRIPTION	ENVIRONMENTAL SIGNIFICANCE																	
	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Bulk infrastructure	2	5	2	0	1	5	50	M (+)	M-H (+)									
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Impact on local tourism activities and businesses

Nuisance factors and a disturbed sense of place can negatively impact the local tourism industry and businesses operating in the area.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	8	5	3	1	1	5	90	M-H (-)	H (-)	6	5	3	1	1	3	48	M (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Surrounding property values

A new development may affect the perceived value of surrounding properties.

PROJECT ALTERNATIVE	BEFORE MITIGATION									AFTER MITIGATION								
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	8	5	2	1	1	4	68	M (-)	M-H (-)	6	5	2	1	1	3	45	M (-)	M (-)
"No-Go" Alternative	-	-	-	-	-	-	-	-	-									

Local business development
A larger processing facility would provide new opportunities for local businesses.

PROJECT DESCRIPTION	ENVIRONMENTAL SIGNIFICANCE																		
	BEFORE MITIGATION									AFTER MITIGATION									
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	4	5	3	1	1	5	70	M (+)	M-H (+)									
No-Go	-	-	-	-	-	-	-	-	-									

New employment opportunities
The project will create new employment opportunities for people with different types and levels of skills.

PROJECT DESCRIPTION	ENVIRONMENTAL SIGNIFICANCE																		
	BEFORE MITIGATION									AFTER MITIGATION									
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	6	5	3	1	1	5	80	M-H (+)	H (+)									
No-Go	-	-	-	-	-	-	-	-	-									

Contribution towards local economic income
The Mossel Bay and Western Cape economies will benefit from the project due to the procurement of goods and
services and the spending of wages and salaries.

PROJECT DESCRIPTION	ENVIRONMENTAL SIGNIFICANCE																		
	BEFORE MITIGATION									AFTER MITIGATION									
	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.	M	D	E	I	R	P	TOTAL (SP)	S	CUMUL.
Preferred Alternative	6	5	3	1	1	5	80	M-H (+)	H (+)									
No-Go	-	-	-	-	-	-	-	-	-									

DECOMMISSIONING AND CLOSURE PHASE

The facility has an expected lifespan of more than 20 years with the modernisation. The demand for fish products is not likely to cease and

effective, efficient processes are necessary. As such it is not possible to foresee the closure of the facility in the near future. The requirements for closure must comply with any legislative mechanisms in place at the time of closure as a minimum.		
Potential impact and risk:	Removal of facility and disposal thereof could cause loss f employment	None
Nature of impact:	Demolition of facility	None
Extent and duration of impact:	Site specific and temporary	None
Consequence of impact or risk:	Loss of employment opportunities	None
Probability of occurrence:	Unknown	None
Degree to which the impact may cause irreplaceable loss of resources:	Negligible	None
Degree to which the impact can be reversed:	High	None
Indirect impacts:	Loss of employment	None
Cumulative impact prior to mitigation:	Unknown	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Unknown	None
Degree to which the impact can be avoided:	Unknown	None
Degree to which the impact can be managed:	Unknown	None
Degree to which the impact can be mitigated:	Unknown	None
Proposed mitigation:	Unknown	None
Residual impacts:	Unknown	None
Cumulative impact post mitigation:	Unknown	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Unknown	None

Traffic		
PLANNING, DESIGN AND DEVELOPMENT PHASE	*Alternative 1 :*	*No Go*
Potential impact and risk:	Traffic congestion in the Mossel Bay CBD area	No change to status quo
Nature of impact:	The movement of large construction and related vehicles will affect traffic flows along access routes.	None
Extent and duration of impact:	Site specific Short term	None

Consequence of impact or risk:	Medium	None
Probability of occurrence:	Probable	None
Degree to which the impact may cause irreplaceable loss of resources:	Very low	None
Degree to which the impact can be reversed:	Low	None
Indirect impacts:	Medium	None
Cumulative impact prior to mitigation:	High	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	None
Degree to which the impact can be avoided:	None	None
Degree to which the impact can be managed:	High	None
Degree to which the impact can be mitigated:	Medium	None
Proposed mitigation:	Provision of a gate between Quay 1 and 2 to improve traffic flow.	None
Residual impacts:	None	None
Cumulative impact post mitigation:	Medium	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low	None
OPERATIONAL PHASE		
Potential impact and risk:	Traffic congestion in the Mossel Bay CBD area	No change to status quo
Nature of impact:	The movement of large construction and related vehicles will affect traffic flows along access routes.	None
Extent and duration of impact:	Site specific Short term	None
Consequence of impact or risk:	Medium	None
Probability of occurrence:	Probable	None
Degree to which the impact may cause irreplaceable loss of resources:	Very low	None
Degree to which the impact can be reversed:	Low	None
Indirect impacts:	Medium	None
Cumulative impact prior to mitigation:	High	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	None
Degree to which the impact can be avoided:	None	None
Degree to which the impact can be managed:	High	None
Degree to which the impact can be mitigated:	Medium	None

Proposed mitigation:	Provision of a gate between Quay 1 and 2 to improve traffic flow.	None
Residual impacts:	None	None
Cumulative impact post mitigation:	Medium	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low	None
DECOMMISSIONING AND CLOSURE PHASE		
The facility has an expected lifespan of more than 20 years with the modernisation. The demand for fish products is not likely to cease and effective, efficient processes are necessary. As such it is not possible to foresee the closure of the facility in the near future. The requirements for closure must comply with any legislative mechanisms in place at the time of closure as a minimum.		
Potential impact and risk:	Removal of facility and disposal thereof could cause loss f employment	Removal of facility and disposal thereof could cause loss f employment
Nature of impact:	Demolition of facility	Demolition of facility
Extent and duration of impact:	Site specific and temporary	Site specific and temporary
Consequence of impact or risk:	Loss of employment opportunities	Loss of employment opportunities
Probability of occurrence:	Unknown	Unknown
Degree to which the impact may cause irreplaceable loss of resources:	Negligible	Negligible
Degree to which the impact can be reversed:	High	High
Indirect impacts:	Loss of employment	Loss of employment
Cumulative impact prior to mitigation:	Unknown	Unknown
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Unknown	Unknown
Degree to which the impact can be avoided:	Unknown	Unknown
Degree to which the impact can be managed:	Unknown	Unknown
Degree to which the impact can be mitigated:	Unknown	Unknown
Proposed mitigation:	Unknown	Unknown
Residual impacts:	Unknown	Unknown
Cumulative impact post mitigation:	Unknown	Unknown
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Unknown	Unknown

Note: The EAP may decide to include this section as Appendix J to the BAR.

(c) Provide a summary of the site selection matrix.

The site selection matrix provided below has included the possibility of an off site property (site 2), to provide additional information in confirming that an off site location is not feasible or viable.

Site Selection Matrix

Criteria		Site 1	Site 2 (off site)
Property			
Size	3	15	9
Applicant owned	1	5	1
Zonation	3	12	9
Landuse	2	8	2
Services		0	0
Access	3	15	3
Water	3	15	9
Electricity	3	12	9
Environmental considerations	2	8	4
Waste Management	1	5	2
		95	48

1 = Not Acceptable
2 = Poor
3 = Acceptable
4 = Very Good
5 = Excellent

Figure 49: Site selection matrix indicating site 1 as the preferred and only site
Multiply weighting for criteria by the individual score assigned i.e. weighting for Size is 3, score given is 5 therefore matrix value is 15

The matrix value is determined by multiplying the weighting by the individual score assigned.

The maximum score that can be achieved by this site selection matrix is 105. Achieving a 95 score confirms the suitability of the site for the proposed activity.

(d) Outcome of the site selection matrix.

The current site housing the cannery and the site proposed for the fishmeal & fish oil reduction facility are the preferred and only site assessed for the purpose of this application. No feasible alternative sites have been considered. Due to the proximity to the existing cannery, winning of the lease tender by the Applicant, zonation and well as land use the property, the site is rated as excellent for the proposed project. The same applies to the services on the site, access, water and electricity. Environmental considerations have been taken into account and are zero as they have been identified as having a very low impact. Waste management on site is a much preferred option to the current system and also scores very highly.

No other sites have been considered as, both location and existing facility, along with the forward planning for the Port of Mossel Bay suit the proposed development.

3. SPECIALIST INPUTS/STUDIES, FINDINGS AND RECOMMENDATIONS

Note: Specialist inputs/studies must be attached to this report as Appendix G and must comply with the content requirements set out in Appendix 6 of the EIA Regulations, 2014 (as amended). Also take into account the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014, any subsequent Circulars, and guidelines available on the Department's website (http://www.westerncape.gov.za/eadp).

Provide a summary of the findings and impact management measures identified in any specialist report and an indication of how these findings and recommendations have been included in the BAR.

3.1 ODOUR:

Based on the overestimated annual operating cycle and the measured emission from two similar plant in Europe, LAQS concludes that it is possible to operate a modern fishmeal production plant in a manner than does not result in odorous emissions to the point where odours can be detected in the area surrounding the plant.

In fact, the maximum 99-percentile concentration estimated anywhere in the surrounding area is 135.5 ng/m^3 which is substantially lower than the odour threshold of 800 ng/m^3 (0.8 µg/m^3) used by LAQS in this assessment.

It implies that TMA emissions can increase from the measured TMA concentration of 712 µg/m^3 (0.712 mg/m^3) to approximately 4.2 mg/m^3 before the 99-percentile concentration will be exceeded. This calculated maximum value compares well with the emission limit of 5 mg/m^3 imposed on such plants in France and Switzerland.

If the European TMA odour threshold value of 2 µg/m^3 is used as measure, the TMA emissions can increase to 10.5 mg/m^3 before the European odour threshold limit will be breached.

Apart from the impact of odorous emissions, the dispersion model estimates that none of the other emissions threaten exceedance of the official air quality standards set for PM10 particulates, SO_2, NO_2 and CO.

It must be borne in mind that this air quality impact assessment is based on an expected worst-case scenario and shows annual averaged and 99-percentile concentrations that could potentially occur if Afro Fishing were to operate at full capacity for 24 hours per day and 330 days per year. Actual operating conditions are expected to result in substantially lower annual emissions and, hence, lower impact on air quality. The significance rating has been determined as Very Low.

RECOMMENDATIONS

As some of the products of the fishmeal process are destined for human consumption, it is recommended that only freshly harvested fish is processed at the proposed fishmeal plant in order to comply with the current health and hygiene requirements of the canning process.

It is of paramount importance that all process equipment in the fishmeal plant is cleaned and sanitised at regular intervals to minimise the formation of odours between production runs. It is recommended that a cleaning procedure and schedule is defined for this purpose.

It is recommended that a preventative maintenance program is designed and implemented with the assistance of the preferred technology supplier to ensure that the equipment operates at optimum conditions.

It is of paramount importance that the extraction system that gather fumes from the various process steps and designed properly to ensure that the correct volume of air is extracted from each point. While it can be assembled locally, it is recommended that design of this system is left to the supplier of the RTO so that a well-balanced system is installed.

It is recommended that specific attention is paid to the day-to-day operation of the RTO as its availability is of key importance to remove odorous emissions from the plant. As is the case with the process equipment, it is recommended that a formal maintenance procedure and schedule is developed for the RTO and this schedule meets the requirements of the equipment supplier.

It is recommended that supervisory personnel in charge of the operation of the fishmeal plant

receive thorough training in the operation and maintenance of the process, especially the RTO, to ensure that breakdowns and kept to a minimum and that fault diagnosis and correction can be achieved in the shortest period of time.

Even though the main odorous compound emitted from Afro Fishing's operations are expected to consist of amines, there is no easy method for measuring such compounds continuously and costs running to a few million Rand may be incurred if such monitoring of amines is required.

It is rather recommended that the TMA emissions from the RTO stack are verified biannually by and independent contractor.

It is recommended further that emissions from the boilers are verified on a biennial basis by an independent contractor.

3.2 SOCIO-ECONOMIC:

Potential negative impacts

The following concerns (medium or higher impact after mitigation) have been identified:

1. Sense of place: The significantly larger Afro Fishing facility will be visible to a large number of receptors and may negatively affect the current small coastal harbour character of Mossel Bay, one of the key selling features that attract tourists.

2. Nuisance factors (dust, malodours, noise and human wellbeing): The impact (mainly noise from harbour activities) will be medium to a limited number of receptors in close proximity to the construction site, but low to those further away.

3. Tourism and related businesses: Given the potential impact on the sense of place and nuisance factors, the Afro Fishing project could have a medium negative residual impact on the tourism offering in Mossel Bay.

4. Real estate values of surrounding land: There is a medium probability that the proposed Afro Fishing project could have a negative impact on the property prices of adjacent land.

5. Impact on traffic flows: Large construction vehicles may impact traffic flows during the construction phase.

6. Influx of job-seekers: A significant number of employment opportunities would be linked to the proposed project, which may add to the current influx of job seekers experienced in Mossel Bay

Potential positive impacts

A number of benefits are associated with the proposed Afro Fishing Project:

1. Job creation: The findings of the employment analysis are considered in the context of the entire development with capital expenditure phased in over a 3-year period. Based on the different scenarios, the project could sustain 95 to 104 jobs per month on average (over the construction period of 3 years) in the Western, or 105 to 118 jobs per month on average if considered at the local (Mossel Bay) level (Mossel Bay has a lower GVA to employment levels). During operations, the project could initially (Year 1) create 456 jobs in the Mossel Bay area if productivity remained constant and increasing to 502 if external influences on demand are considered.

In terms of the Western Cape, an estimated total of 10 222 jobs could be sustained during the first 10 years of operation or approximately 1 000 direct, indirect and induced jobs per annum on average. When the impact on Mossel Bay is considered, 1 100 direct, indirect and induced jobs per annum on average could be sustained of which 560 are direct jobs.

2. Contribution towards economic income: During the construction phase, a combined initial investment of R437 million (R349,6 million net of the initial import leakage) will give rise to a multiplied

increase in GVA of R3 845,6 million in the Western Cape Province. Based on the initial direct expenditure, a large propensity to import goods and services, and the contribution of the Mossel Bay area to the Western Cape Province, approximately R162,44 million will accrue to the area over and above the initial direct capital expenditure on these components.

A forecast of the revenue over the 10 years once the facility is fully operational (less an estimated leakage) will give rise to a multiplied increase in GVA of R5 799,407 million in the Western Cape Province over the first 10 years of the project (with no assumption as to the estimated stabilising year). Based on the initial direct expenditure, a large propensity to import goods and services, and the contribution of Mossel Bay to the Western Cape Province, approximately R102,8 million will accrue to the area over and above the initial operational revenue. Note, the revenue figures used for these calculations are confidential.

3. Socio-economic prescriptions have become a standard inclusion in the submission of development proposals to relevant government departments at local, provincial and national level, and in this context refer to socio-economic development contribution requirements of the Economic Development Scorecard.

Afro Fishing adheres fully to the Enterprise and Supplier Development requirement and Socio-economic Development contributions stated in the Policy and 80% to the Enterprise Development in the terms of the Policy and by implication the BBBEE Code.

4. Contribution towards infrastructure: The need for sewerage, potable and fire water will be within the old I&J quantities, but there will be a substantial increase in the power requirement for additional heating and chilling facilities. Although Afro Fishing will only need one new 185 mm2 PILC 11 kV cable, the project will pay for a second cable to cater for further developments in the precinct and to improve the stability of the electricity supply ring in Mossel Bay.

Nature of the Impact	Rating before mitigation	Rating after mitigation (Residual impact)
Construction		
Traffic and road infrastructure	60 (med neg)	50 (med neg)
Nuisance factors (Dust and noise pollution)	55 (med neg)	50 (med neg)
Influx of job-seekers	44 (med neg)	40 (med neg)
Increase in local crime	30 (low neg)	27 (low neg)
Economic income	65 (med pos)	
New employment opportunities	65 (med pos)	
Operations		
Sense of place	75 (med-high neg)	55 (med neg)
Nuisance factors (malodours, noise and human wellbeing)	95 (med-high neg)	44 (med neg)
Impact on local tourism and businesses	90 (med-high neg)	48 (med neg)

Nature of the Impact	Rating before mitigation	Rating after mitigation (Residual impact)
Impact on surrounding property values	68 (med neg)	45 (med neg)
Pollution of the bay area	72 (med neg)	39 (low neg)
Traffic and road infrastructure	40 (med neg)	27 (low neg)
Bulk infrastructure requirements/contributions	50 (med pos)	
Local business development	70 (med pos)	
Economic income	80 (med pos)	
New employment opportunities	80 (med pos)	

Cumulative impacts

Cumulative impacts refer to any other developments as well as existing activities within the immediate area that could compound any positive or negative impacts associated with the proposed development. The Old Town area is fully developed, with mainly renovations that are foreseen in terms of new construction activities. The recent discovery of the gas fields suitable for exploration just off Mossel Bay (Brulpadda) may also result in additional infrastructure required for mining of the gas fields. A new Waterfront development has been proposed for the Mossel Bay Harbour area, which include the area to the west of the Vincent Jetty and along the south-eastern border of the Afro Fishing site.

The potential negative impacts would be compounded if additional developments were introduced in the immediate and surrounding areas. These impacts would typically relate to sense of place, traffic, infrastructure requirements, crime and nuisance factors. The employment and economic income benefits of a number of developments in the greater Mossel Bay area could also be compounded.

Mitigation measures

Many of the negative socio-economic impacts that were identified (summarised below) could be mitigated by introducing the measures proposed by various specialists that must be considered as requirements for approval of the Application. Monitoring and evaluation of socio-economic impacts and assessing the outcomes on a continuous basis would further enhance the social and economic fabric and surrounding communities.

Summary of mitigation measures suggested for the different impacts

Impact	Mitigation measures
Construction phase	
Impact on traffic flows	No recommendations were made in the TIA related to the construction phase.
Nuisance factors (dust and noise)	Dust and noise emissions should be minimised by means of a CEMP that would include measures and trigger mechanisms to mitigate any potential impacts to nearby receptors.
Influx of job-seekers	Contractors need to employ people from the immediate area whenever possible.

Impact	Mitigation measures
Local crime	TNPA applies strict access control to the Port Limits, which will add a high level of security during the construction phase. Co-operation between the Developer and the contractors is essential; fencing and on-site security measures will minimise the risk.
Operational phase	
Sense of Place	Most of the infrastructure would be enclosed to retain the current "look and feel" of the current Afro Fishing buildings.
Nuisance factors (malodours, noise and human well-being)	Nuisance factors during the operational phase should be minimised by means of an EMP that include measures and trigger mechanisms to mitigate any potential impacts to nearby receptors.
Impact on traffic flows	The removal of the fence between the existing Afro Fishing cannery site and the proposed Fish Meal and Oil Reduction facility will help to increase circulation between the two facilities and distribute traffic.
Pollution of the bay area	Regular monitoring of the water quality at the point of discharge and beyond would be required to ensure that the plant adheres to legislative requirements.
Local tourism and businesses	It is imperative that the sense of place that attracts tourists is not negatively affected.
Surrounding property values	Special attention is required to minimise the visual impact and nuisance factors linked to the Afro Fishing project.

Recommendations

The following recommendations with specific reference to the socio-economic context are proposed to address various matters related to the Application. The mitigation measures proposed in the following table should be consolidated into an Implementation Plan.

Phase	Mitigation measures
Pre-construction	**Procurement Strategy** that includes the following and applies to the Afro Fishing project: (a) Initiate the activity during the first phase of the development; (b) Strategy is the responsibility of the contractor(s) collectively under the guidance of the developer; (c) Adoption of a "Mossel Bay First" approach with a focus on opportunities for local labour and businesses as a priority. Contractors are required to provide an indication of the geographical location of sub-contractors (businesses) and local labour; and (d) Local contractors invited to tender for work in the context of the terms and conditions included in RFP documentation.
Construction	**Dust and noise emissions** should be minimised by means of a CEMP that would include measures and trigger mechanisms to mitigate any potential impacts to nearby receptors.
Pre-construction & Construction	**Communication Protocols** that address directly and indirectly affected residents and surrounding land owners, with specific reference to activities, timelines and intended impacts related to the construction phase and all related activities associated with the implementation of the project (i.e. during the operational phase). **Objectives** • To orientate, generate awareness and gain positive attitudes among stakeholders as far as possible; and • To engage and inform stakeholders of progress regarding all phases of construction. **Target audience** • Property owners and users of the land portions directly surrounding the proposed activity; and • Other stakeholders and property owners that may be affected.

Phase	Mitigation measures
	Major types of messages • Inform directly affected residents on the periphery of the site earmarked for the project others that would frequent the area; • Commencement date for construction activities related to the project; • Duration and extent of the construction activities and where applicable, with an emphasis on individual activities; • Progress updates, including any delays with a construction-related activity; and • Ensure appropriate signage is introduced to warn persons frequenting the area, those residing adjacent to the development area.
Pre-construction, Construction & Operations	The **Monitoring and Evaluation Plan (M&EP)** is a working framework document that identifies key measurement indicators and sets out the procedures for tracking, monitoring, calculating and verifying the impacts associated with the project. This M&EP must be used for the planning and establishment of the project and during its continued operations. Adherence to the M&EP framework is necessary for the successful measurement and tracking of the impacts associated with the establishment and operations and to prepare for the periodic audit and verification process that will have to be undertaken to confirm any changes in the baseline measurement and stated benchmarks. The Monitoring and Evaluation framework be developed into an action plan that will be introduced in accordance with the prescripts indicated in Section 9 of the Report.

3.3 TRAFFIC:

The proposed development of the Fish Meal and Oil Reduction facility is expected to have a very small impact on the surrounding road network and hence the development could be allowed to continue from a transportation point of view.

4. ENVIRONMENTAL IMPACT STATEMENT

Provide an environmental impact statement of the following:

(i) A summary of the key findings of the EIA.

Since the proposal for the fishmeal & fish oil reduction facility is proposed on a site within the Port of Mossel Bay that

(a) falls within an area zoned for industrial purposes,

(b) is located in an area designated by the TNPA for commercial fisheries;

(c) is utilised for associated services already,

(d) has existing bulk infrastructure that only requires modification and minor alterations,

(e) is already connected to municipal services and infrastructure;

(f) provides Best Available Technology (BAT) to process fishmeal with minimal environmental impact, and

(g) will have significantly positive economic benefits for the Mossel Bay area.

it is summarised that the potential impact(s) associated with the proposed activity is likely to be very low to medium low and of an acceptable nature given the context and designated land use.

(ii) Has a map of appropriate scale been provided, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers?	*YES*	*NO*

There are no sensitive environmental features on this site

(iii) A summary of the positive and negative impacts that the proposed development and alternatives will cause in the environment and community.

The following impacts may occur:

- Odour (-ve) very low
- Noise (-ve) low
- Socio-economic (-ve) low to medium, (+ve) medium
- Traffic (-ve) very low

5. IMPACT MANAGEMENT, MITIGATION AND MONITORING MEASURES

(a) Based on the assessment, describe the impact management, mitigation and monitoring measures as well as the impact management objectives and impact management outcomes included in the EMPr. The EMPr must be attached to this report as Appendix H.

5.1 ODOUR

RECOMMENDATIONS

As some of the products of the fishmeal process are destined for human consumption, it is recommended that only freshly harvested fish is processed at the proposed fishmeal plant in order to comply with the current health and hygiene requirements of the canning process.

It is of paramount importance that all process equipment in the fishmeal plant is cleaned and sanitised at regular intervals to minimise the formation of odours between production runs. It is recommended that a cleaning procedure and schedule is defined for this purpose.

It is recommended that a preventative maintenance program is designed and implemented with the assistance of the preferred technology supplier to ensure that the equipment operates at optimum conditions.

It is of paramount importance that the extraction system that gather fumes from the various process steps and designed properly to ensure that the correct volume of air is extracted from each point. While it can be assembled locally, it is recommended that design of this system is left to the supplier of the RTO so that a well-balanced system is installed.

It is recommended that specific attention is paid to the day-to-day operation of the RTO as its availability is of key importance to remove odorous emissions from the plant. As is the case with the process equipment, it is recommended that a formal maintenance procedure and schedule is developed for the RTO and this schedule meets the requirements of the equipment supplier.

It is recommended that supervisory personnel in charge of the operation of the fishmeal plant receive thorough training in the operation and maintenance of the process, especially the RTO, to ensure that breakdowns and kept to a minimum and that fault diagnosis and correction can be achieved in the shortest period of time.

Even though the main odorous compound emitted from Afro Fishing's operations are expected to consist of amines, there is no easy method for measuring such compounds continuously and costs running to a few million Rand may be incurred if such monitoring of amines is required.

It is rather recommended that the TMA emissions from the RTO stack are verified biannually by and independent contractor.

It is recommended further that emissions from the boilers are verified on a biennial basis by an independent contractor.

5.2 SOCIO ECONOMIC

IMPACT STATEMENT

The expansion of the Afro Fishing facility in the Port of Mossel Bay are supported on condition that the recommendations/mitigation measures included in this report, are implemented. In addition, the recommended enhancement and mitigation measures contained in other specialist reports and those required to support mitigation of several impacts identified and assessed in the Socio-economic Impact Assessment report, should be implemented.

The following recommendations with specific reference to the socio-economic context are proposed to address various matters related to the Application. The mitigation measures proposed in the following table should be consolidated into an Implementation Plan.

Phase	Mitigation measures
Pre-construction	**Procurement Strategy** that includes the following and applies to the Afro Fishing project: (a) Initiate the activity during the first phase of the development; (b) Strategy is the responsibility of the contractor(s) collectively under the guidance of the developer; (c) Adoption of a "Mossel Bay First" approach with a focus on opportunities for local labour and businesses as a priority. Contractors are required to provide an indication of the geographical location of sub-contractors (businesses) and local labour; and (d) Local contractors invited to tender for work in the context of the terms and conditions included in RFP documentation.
Construction	**Dust and noise emissions** should be minimised by means of a CEMP that would include measures and trigger mechanisms to mitigate any potential impacts to nearby receptors.
Pre-construction & Construction	**Communication Protocols** that address directly and indirectly affected residents and surrounding land owners, with specific reference to activities, timelines and intended impacts related to the construction phase and all related activities associated with the implementation of the project (i.e. during the operational phase). **Objectives** • To orientate, generate awareness and gain positive attitudes among stakeholders as far as possible; and • To engage and inform stakeholders of progress regarding all phases of construction. **Target audience** • Property owners and users of the land portions directly surrounding the proposed activity; and • Other stakeholders and property owners that may be affected.

Phase	Mitigation measures
	Major types of messages • Inform directly affected residents on the periphery of the site earmarked for the project others that would frequent the area; • Commencement date for construction activities related to the project; • Duration and extent of the construction activities and where applicable, with an emphasis on individual activities; • Progress updates, including any delays with a construction-related activity; and • Ensure appropriate signage is introduced to warn persons frequenting the area, those residing adjacent to the development area.
Pre-construction, Construction & Operations	The **Monitoring and Evaluation Plan (M&EP)** is a working framework document that identifies key measurement indicators and sets out the procedures for tracking, monitoring, calculating and verifying the impacts associated with the project. This M&EP must be used for the planning and establishment of the project and during its continued operations. Adherence to the M&EP framework is necessary for the successful measurement and tracking of the impacts associated with the establishment and operations and to prepare for the periodic audit and verification process that will have to be undertaken to confirm any changes in the baseline measurement and stated benchmarks. The Monitoring and Evaluation framework be developed into an action plan that will be introduced in accordance with the prescripts indicated in Section 9 of the Report.

The Monitoring and Evaluation Plan (M&EP) must be used for the planning and establishment of the project and during its continued operations. Adherence to the M&EP framework is necessary for the successful measurement and tracking of the impacts associated with the establishment and operations and to prepare for the periodic audit and verification process that will have to be undertaken to confirm any changes in the baseline measurement and stated benchmarks.

(b) Describe any provisions for the adherence to requirements that are prescribed in a Specific Environmental Management Act relevant to the listed activity or specified activity in question.

- National Environmental Management: Air Quality Act - Atmospheric Emissions License (AEL)

The implementation of the RTO for the management of TMA and odours must take place.

(c) Describe the ability of the applicant to implement the management, mitigation and monitoring measures.

The applicant is committed to ensuring that the development meets all the relevant legal requirements and provides a sustainable facility. The applicant is aware and able to implement all management, mitigation as well as monitoring measures required for the development and operation of a fully licensed fishmeal facility of the highest calibre.

The Applicant is responsible for the existing cannery which has been operating successfully and without any complaints for over eleven years. The experience gained by association will therefore be underlying for operating the facilty at a high standard.

The attached EMPr is intended to provide the guidelines needed to ensure all measures put in place are adhered to.

(d) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

Please see the attached EMPr

(e) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

As above

(f) Describe any assumptions, uncertainties, and gaps in knowledge which relate to the impact management, mitigation and monitoring measures proposed.

The development and operation of fisheries follows very strict guidelines monitored very closely by the Department of Environment, Forestry & Fisheries, as well as the health regulations for facilities processing for human consumption. This leaves very little room for "assumptions, uncertainties, and gaps in knowledge which relate to the impact management, mitigation and monitoring measures". All required measures are mentioned in the EMPr attached.

Furthermore, the issue of an AEL for the fishmeal plant also has very specific requirements and monitoring that must be complied annually (or as identified by the competent authority) with the need for renewal every five years.

There are difficulties with regulated impacts such as odour which may be intermittent and subjective.

SECTION H: RECOMMENDATIONS OF THE EAP AND SPECIALISTS

(a) In my view as the appointed EAP, the information contained in this BAR and the documentation attached hereto is sufficient to make a decision in respect of the listed activity(ies) applied for.	*YES*	~~*NO*~~

(b) If the documentation attached hereto is sufficient to make a decision, please indicate below whether, in your opinion, the listed activity(ies) should or should not be authorised:		
Listed activity(ies) should be authorised:	*YES*	~~*NO*~~

Provide reasons for your opinion

- The implementation of the RTO will become the Best Available Technology (BAT) for fishmeal processing in South Africa.
- The proposal will take place within the Port of Mossel Bay in the precinct identified for commercial fishing in all current and future planning models.
- The impacts have been identified as Very Low to Low Medium by the various specialists.

(c) Provide a description of any aspects that were conditional to the findings of the assessment by the EAP and Specialists which are to be included as conditions of authorisation.

- The RTO must be implemented for the management of odour.
- GRDM requirements for AEL must be adhered to.
- The recommendations of the specialists must be adhered to.

(d) If you are of the opinion that the activity should be authorised, please provide any conditions, including mitigation measures that should in your view be considered for inclusion in an environmental authorisation.

- The RTO must be implemented for the management of odour.
- GRDM requirements for AEL must be adhered to.
- The recommendations of the specialists must be adhered to.

(e) Please indicate the recommended periods in terms of the following periods that should be specified in the environmental authorisation:

i.	*the period within which commencement must occur;*	Within two (2) year as activities are required and in the phased approach for the warehouse facility.
ii.	*the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects;*	First phase within two (2) years and the next phase within five (5) year of construction completion.
iii.	*the period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and*	None
iv.	*the period for which the portion of the environmental authorisation that deals with operational aspects is granted.*	The facility will operate permanently. Therefore no time limit should be placed on the operational aspects of the activity. Any AEL issued for the fishmeal processing will require renewal every 5 years.

SECTION I: APPENDICES

The following appendices must be attached to this report:

APPENDIX			*Confirm that Appendix is attached*
Appendix A:	*Locality map*		✓
Appendix B:	*Site development plan(s)*		✓
	A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;		✓
Appendix C:	*Photographs*		✓
Appendix D:	*Biodiversity overlay map*		✓
Appendix E:	*Permit(s) / license(s) from any other Organ of State, including service letters from the municipality.*		✓
	Appendix E1:	*Copy of comment from HWC.*	✓
Appendix F:	*Public participation information: including a copy of the register of I&APs, the comments and responses report, proof of notices, advertisements and any other public participation information as is required in Section C above.*		✓
Appendix G:	*Specialist Report(s)*		✓
Appendix H:	*EMPr*		✓
Appendix I:	*Additional information related to listed waste management activities (if applicable)*		×
Appendix J:	*If applicable, description of the impact assessment process followed to reach the proposed preferred alternative within the site.*		×
Appendix K:	*Any Other (if applicable).*		✓

SECTION J: DECLARATIONS

1. THE APPLICANT

Note: *Duplicate this section where there is more than one applicant.*

I **Mr Deon van Zyl on behalf of Afro Fishing (Pty) Ltd**, *in my personal capacity or duly authorised thereto, hereby declare/affirm all the information submitted as part of this Report is true and correct, and that I –*

- *am aware of and understand the content of this report;*
- *am fully aware of my responsibilities in terms of the NEMA, the EIA Regulations in terms of the NEMA (Government Notice No. R. 326, refers) (as amended) and any relevant specific environmental management Act and that failure to fulfil these requirements may constitute an offence in terms of relevant environmental legislation;*
- *have provided the EAP and Specialist, Review EAP (if applicable), and Review Specialist (if applicable), and the Competent Authority with access to all information at my disposal that is relevant to the application;*
- *will be responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority;*
- *will be responsible for the costs incurred in complying with the conditions that may be attached to any decision(s) issued by the Competent Authority;*

Note: *If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.*

Signature of the Applicant:	Deon
Name of Organisation:	AFRO FISHING (PTY) LTD
Date:	8 November 2019

2. THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I **Ms Melissa Mackay** on behalf of Cape EAPrac, *as the appointed EAP hereby declare/affirm:*

- *the correctness of the information provided as part of this Report;*
- *that all the comments and inputs from stakeholders and I&APs have been included in this Report;*
- *that all the inputs and recommendations from the specialist reports, if specialist reports were produced, have been included in this Report;*
- *any information provided by me to I&APs and any responses by me to the comments or inputs made by I&APs;*
- *that I have maintained my independence throughout this EIA process, or if not independent, that the review EAP has reviewed my work (Note: a declaration by the review EAP must be submitted);*
- *that I have throughout this EIA process met all of the general requirements of EAPs as set out in Regulation 13;*
- *I have throughout this EIA process disclosed to the applicant, the specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared as part of the application;*
- *have ensured that information containing all relevant facts in respect of the application was distributed or was made available to I&APs and that participation by I&APs was facilitated in such a manner that all I&APs were provided with a reasonable opportunity to participate and to provide comments;*
- *have ensured that the comments of all I&APs were considered, recorded and submitted to the Department in respect of the application;*
- *have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, if specialist inputs and recommendations were produced;*
- *have kept a register of all I&APs that participated during the PPP; and*
- *am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).*

Signature of the EAP:	
Name of Company:	Cape Environmental Assessment Practitioners (Cape EAPrac)
Date:	8 November 2017

Cape EAPrac
P.O. Box 2070 / George 6530
17 Progress Street
Tel: 044 874 0365 Fax: 044 874 0432
Web: www.cape-eaprac.co.za

3. THE REVIEW ENVIRONMENTAL ASSESSMENT PRACTITIONER

I ......, as the appointed Review EAP hereby declare/affirm:

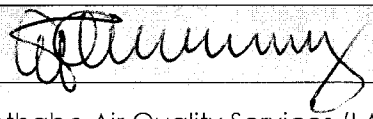
- *that I have reviewed all the work produced by the EAP;*
- *the correctness of the information provided as part of this Report;*
- *that I have, throughout this EIA process met all of the general requirements of EAPs as set out in Regulation 13;*
- *I have, throughout this EIA process disclosed to the applicant, the EAP, the specialist (if any), the review specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared as part of the application; and*
- *am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).*

Signature of the Review EAP:	
Name of Company:	
Date:	

4. THE SPECIALIST

I **Mr Chris Albertyn on behalf of LAQS**, *as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I :*

- *in terms of the general requirement to be independent:*
  - *other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or*
  - *am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 has been appointed to review my work (Note: a declaration by the review specialist must be submitted);*
- *in terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;*
- *have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and*
- *am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).*

Signature of the Specialist:	
Name of Company:	Lethabo Air Quality Services (LAQS)
Date:	7 November 2019

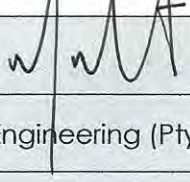
I **Dr Jonathan Bloom on behalf of MPBS**, *as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I :*

- *in terms of the general requirement to be independent:*
  - *other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or*
  - *am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 has been appointed to review my work (Note: a declaration by the review specialist must be submitted);*
- *in terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;*
- *have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and*
- *am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).*

Signature of the Specialist:	
Name of Company:	Multi Purpose Business Solutions (MPBS)
Date:	7 November 2019

I **Mr Frans van Aardt on behalf of Urban Engineering (PTY) Ltd**, *as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I :*

- *in terms of the general requirement to be independent:*
  - *other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or*
  - *am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 has been appointed to review my work (Note: a declaration by the review specialist must be submitted);*
- *in terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;*
- *have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and*
- *am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).*

Signature of the Specialist:	
Name of Company:	Urban Engineering (Pty) Ltd
Date:	8 November 2019

5. THE REVIEW SPECIALIST

I ......, as the appointed Review Specialist hereby declare/affirm:

- *that I have reviewed all the work produced by the Specialist(s);*
- *the correctness of the specialist information provided as part of this Report;*
- *that I have, throughout this EIA process met all of the general requirements of specialists as set out in Regulation 13;*
- *I have, throughout this EIA process disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared as part of the application; and*
- *I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).*

Signature of Review Specialist:	
Name of Company:	
Date:	

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