

ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC) APPLICATION
REFERENCE NO.: APP-00397

THE PROPOSED ACTIVITY	PERMIT FOR THE ABSTRACTION OF SEAWATER; AND WASTEWATER AND EFFLUENT DISPOSAL EXEMPTION PERMIT
REPORT DATE	APRIL 2021
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VOLUME 2

ENVIRONMENTAL AND SOCIAL MANAGEMENT AND
MONITORING PLAN (ESMMP)

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ACRONYMS AND ABBREVIATIONS

BOD:	Biological Oxygen Demand
BSCI:	Business Social Compliance Initiative
CoC:	Chain of Custody
COD:	Chemical Oxygen Demand
COVID-19:	Corona Virus of 2019
DAFF:	Dissolved Air Flotation
DO:	Dissolved Oxygen
ECC:	Environmental Clearance Certificate
EMS:	Environmental Management System
ESMP:	Environmental and Social Management Plan
ESMMP:	Environmental and Social Management and Monitoring Plan
ESMS:	Environmental and Social Management System
EVG:	Economic Value Generated
FSC:	Forest Stewardship Council
FOG:	Fats, Oil and Grease
FTA:	Foreign Trade Association
GHG:	Greenhouse Gases
GRI:	Global Reporting Initiative
HACCP:	Hazard Analysis and Critical Control Point
I&APs:	Interested and Affected Parties
IFC:	International Finance Corporation
IFS:	International Featured Standard
IISD:	International Institute for Sustainable Development
ILO:	International Labour Organization
ISO:	International Standard Organization
MAWLR:	Ministry of Agriculture, Water and Land Reform
MEFT:	Ministry of Environment, Forestry and Tourism
MFMR:	Ministry of Fisheries and Marine Resources
MJCHT:	MJC Halaal Trust
MSC:	Marine Stewardship Council

OHSAS:	Occupational Health and Safety Management Certification
PM:	Particulate Matter
PPE:	Personal Protective Equipment
SDGs:	Sustainable Development Goals
SHE:	Safety, Health and Environment
SOPs:	Standard Operating Procedures
SPM:	Suspended Particulate Matter
TDS:	Total Dissolved Solids
TPI:	Transition Pathway Initiative

1. INTRODUCTION

EMBWINDA FISHING (PTY) LTD (2012/0062), hereinafter referred to as the proponent, is a majority Namibian fishing company operating in the Bay area of the Namibian Ports Authority in the Municipal Council of Walvis Bay, Erongo Region. It is a fish processing company and exporter of value-added products to the European market through an intermediary Grupo Iberconsa in Vigo, Spain (<http://www.iberconsa.es>) and foreign shareholding by Cadilu Fishing (Pty) Ltd and Canido Fishing (Pty) Ltd. In support of processing the landings, the proponent has applied for the abstraction and use of 20,000 m³/day of seawater which was subjected to approval and issuance of a conditional permit (Permit No. 11445 issued on the 13th June 2019); and the disposal of wastewater and effluent subject to an issuance of a conditional exemption permit (Permit No. 727 issued on 20th November 2018) by the Ministry of Agriculture, Water and Land Reform (MAWLR). The former permit is due for renewal, whereas the latter is due for renewal only 01st December 2023.

The awarded permits and a licenses related to the abstraction of sea water from the Atlantic Ocean, and wastewater and effluent disposal into the Atlantic Ocean, *the proposed activity*, triggers listed activities and cannot be undertaken without an Environmental Clearance Certificate (ECC) as contemplated by Section 27(1) and (2) (b) and (i) of the Environmental Management Act (Act No. 7 of 2007) (*Government Gazette No. 3966, 27 December 2007*), and an environmental assessment as contemplated by Section 33 of the Act and the list of activities (*Government Notice No. 29, 18 January 2012 of the Government Gazette No. 4878, 6 February 2012*) that may not be undertaken without an ECC. As a further requirement of the Environmental Management Act (Act No. 7 of 2007) and of the Environmental Impact Assessment Regulations of 2012: Environmental Management Act, Act No. 7 of 2007 (*Government Notice No. 30, 18 January 2012*) and (*Government Gazette No. 4878, 6 February 2012*), every environmental assessment report should be accompanied by an Environmental Management Plan.

The proponent is required to prepare a scoping report in terms of Environmental Impact Assessment Regulation 8(a) to (i) of the Environmental Management Act (Act No. 7 of 2007).

A scoping report is drafted as submitted as **VOLUME 1: SCOPING REPORT** separately for the purposes of fulfilling the requirements of Regulation 8.

The proponent is required to draft a management plan with information on the proposed management, mitigation, protection or remediation measures in terms of Regulation 8(j) of the Environmental Management Act (Act No. 7 of 2007). An environmental management plan is drafted and submitted as **VOLUME 2: ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)** to support the scoping report and further to the fulfilment of Regulation 8.

This **VOLUME 2: ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)** of the submissions to the Ministry of Environment, Forestry and Tourism (MEFT) for an ECC and presented in this section is an instrument that aims to ensure that all details, regarding:

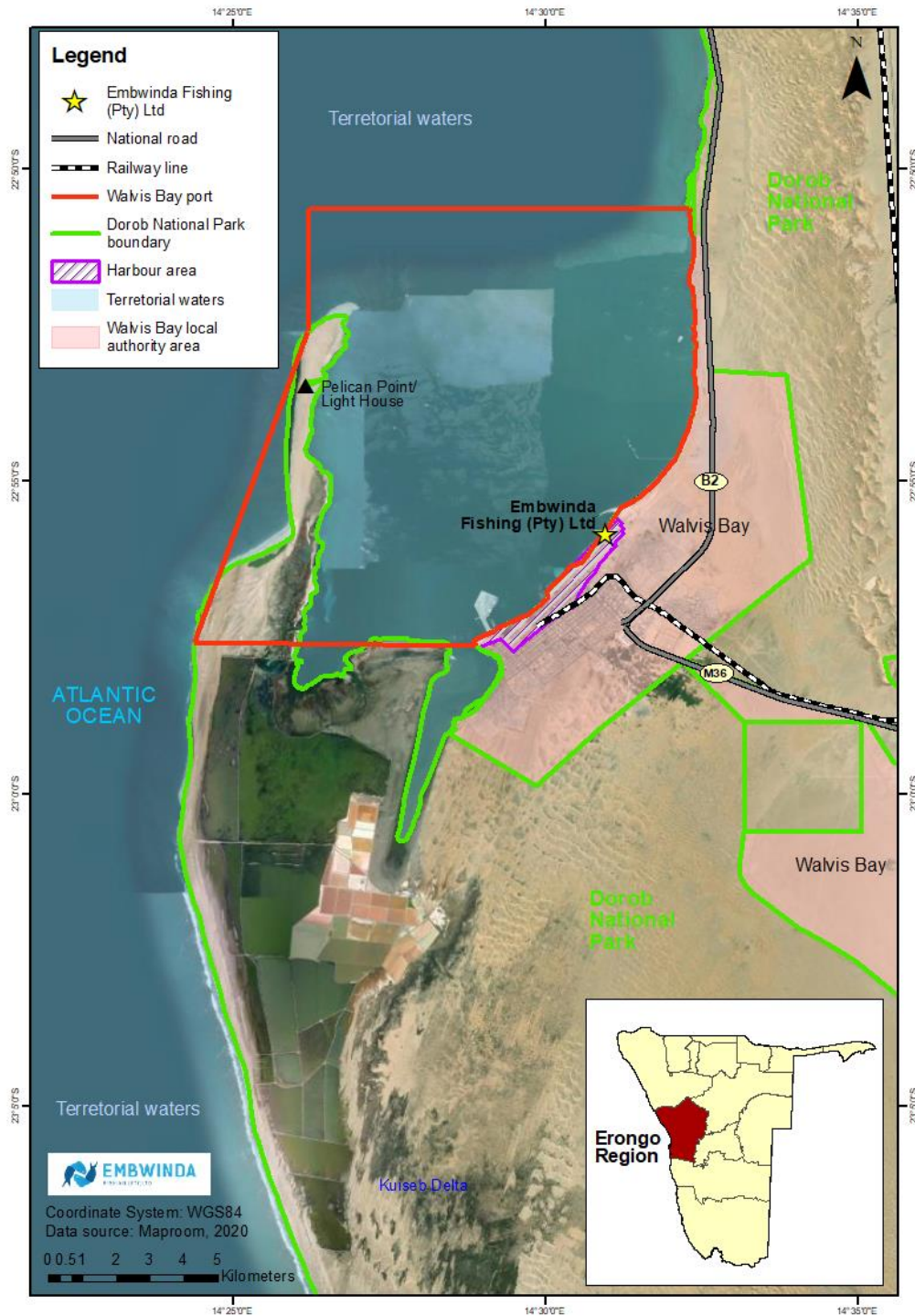
- (a) Identification of **environmental quality objectives, goals, targets and indicators** are identified for the management of the impacts related to the proposed activity;
- (b) **Mitigation measures** for the identified impacts in the Volume 1: Scoping Report are managed during the implementation and operation of the seawater abstraction, effluent discharge and wastewater treatment;
 - to eliminate or offset adverse environmental and social impacts, or
 - to reduce them to acceptable levels;
- (c) that actions needed to implement these mitigation measures, are **monitored and documented**.

Therefore, the ESMMP also incorporates a Monitoring Plan for the identified mitigation actions with their goals, targets and indicators that will be implemented over the life-cycle of the project with roles assigned of those executing the plan during the implementation and monitoring period.

2. OVERVIEW OF THE PROPOSED ACTIVITY

2.1 Location of the proposed activity

The proposed activity is located in the jurisdictions of the District of Walvis Bay, Walvis Bay Urban Constituency, and Municipal Council of Walvis Bay in the Erongo Region in the Walvis Bay harbour administered by the Namibian Ports Authority (NAMPORT) and 30 m from the Atlantic Ocean. The factory is sandwiched between Abroma Fishing factory and Quan's Packaging/Cato jetty and where the establishments on the south-westerly and north-easterly sides are predominantly fish processing factories; namely; Abroma Fishing, Hangan Sea Food, Gendor Fishing, Novanam and Gendev Group (see - *Map 1*).



Map 1: Location of the proposed activity in relation to the various jurisdictions

2.2 Water Resources Developments:

The proponent is currently and by virtue of the approved permits allowed to pump seawater from the Atlantic Ocean and to operate the seawater treatment plant for treating abstracted seawater from the Atlantic Ocean and convey treated seawater through the installed pipelines and hose reels for fish processing activities. The seawater treatment plant operates in the following process and steps (i) to (xii) below as an elaboration of the illustration in *Figure 1*.

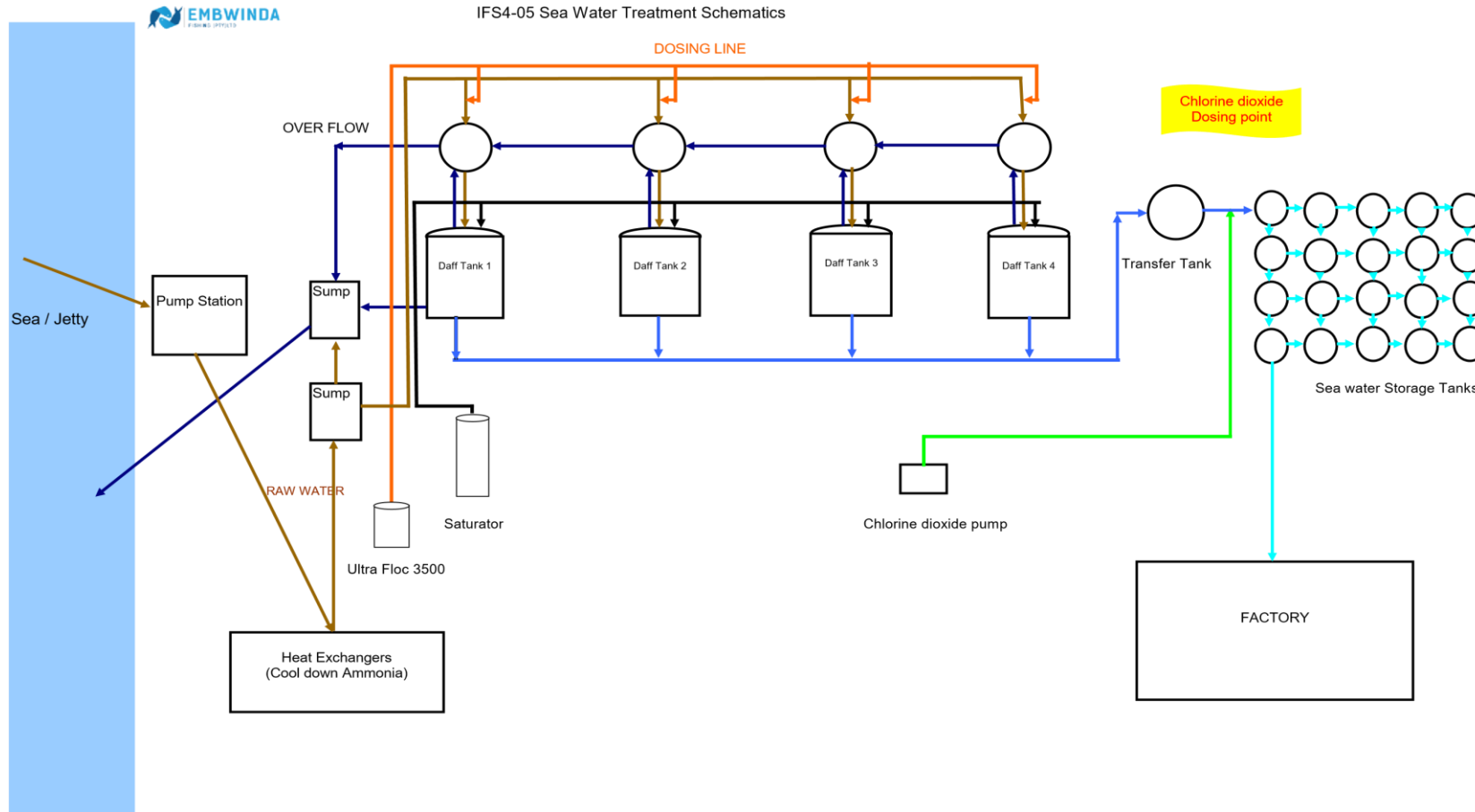


Figure 1: Schematic outlay of the seawater treatment plant

- (i) Pumping of seawater from the ocean at 800 m³ per hour from one (1) meter below the water level by two (2) intake pipes situated at the jetty and a pump station with four (4) pumps and operating as two (2) water pumps with abstraction capacity of 400 m³ of seawater per hour, respectively with additional two (2) pumps on standby. The opening of the piping at the inlet has a configuration of a flow-through static strainer or a screen of 10 mm perforations to prohibit the abstraction of seawater comprising of solid particles – see *Plate 1*.

Plate 1: Intake pipes for pumping of seawater from the ocean located at the jetty shoreward from the pump station.



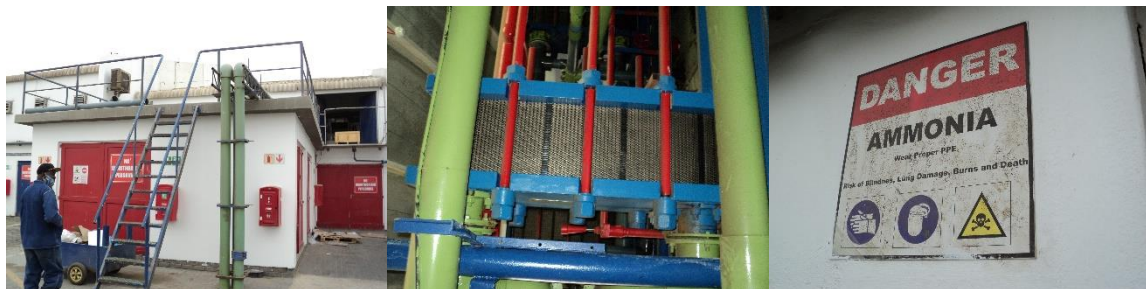
- (ii) Two (2) additional strainers for filtration of abstracted seawater are situated in the pump station with 1.2 mm and 0.5 mm at 35°, respectively. The next step involves electro-shocking of aquatic organisms or anti-fouling of the abstracted seawater using Cathelco-copper rods at 1.3A – see *Plate 2*.

Plate 2: Filtration with strainers and electroshocking/antifouling of abstracted seawater at the pump station.



- (iii) The filtered raw seawater is transferred to Ammonia (NH₃) heat exchanger plates for cooling down the refrigeration columns – see *Plate 3*.

Plate 3: Transfer of filtered seawater to Ammonia (NH₃) heat exchanger plates for cooling of refrigeration columns.



- (iv) The next step is the return of raw seawater from the heat exchanger plates to the sump at 800m³ per hour and the subsequent 120-200m³ is pumped from the sump for flocculation into four (4) flocculation tanks with capacity of 2.8m³ whilst 600-680m³ return to the ocean by gravitation backwash and notably with a slight

temperature variation from the intake water¹ - see **Plate 4**. **Plate 4:** Backwash return of excess water from heat exchanger plates to the ocean by gravitation.



- (v) The raw seawater is pumped into four (4) flocculation columns at 120 m³ per hour, albeit 200m³ to make provision for wear and tear; i.e., saltwater effect, impeller in two (2) raw water pumps (18kW) – see **Plate 5**.

Plate 5: Pumping of filtered seawater into four (4) flocculation columns at 120 m³.

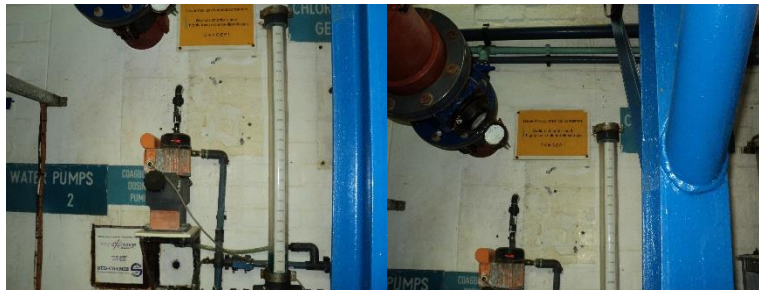


- (vi) Four (4) dosing points are situated at the flocculation columns for dosing with Ultra Flocc 3500 flocculent (Aluminium chlorohydrate coagulant, Al₂ClH₇O₆) (8 g/m³) an

¹ The backwash from the heat exchanger plates is raw water without any change in chemical constituents, yet with a slight increase in temperature due to the heat exchange process at the refrigeration columns.

alkali from the Ultra Flocc enclosed holding tank (210L) and according to turbidity results²; i.e., manual regulation of flocculent dosing). Flocculation is necessary for changing the structural conformation and surface charge distribution of particles before entering the flocculation columns. Flocculation is used to improve the treatment of the seawater by stirring the suspension, clustering and settling particles and fine matter to facilitate removal as large flocs (Tay *et al.*, 2006) – see **Plate 6**;

Plate 6: Treatment of filtered seawater at the flocculation columns with Ultra Flocc 3500 flocculent (Aluminium chlorohydrate coagulant, $\text{Al}_2\text{ClH}_7\text{O}_6$).



- (vii) The pre-treated seawater is passed through stainless steel pressurization tank for air saturation; i.e., 4 bar water and 4 bar air, before air enters the flotation stage (Watertech Experts, 2019) by a Pisten B3800 compressor; i.e., 20A, 250 liters air, situated between the flocculation columns and fitted with water traps and oil traps – see **Plate 7**.

Plate 7: Air saturation of filtered seawater in stainless pressurization tank by Pisten B3800 compressor.

² Turbidity measurements are taken four times in the morning and four times in the afternoon for the manual regulation of the flocculent dosing



- (viii) Clear seawater is transferred to the four (4) dissolved air flotation (DAF) units (22m³) or tanks with sand filters (17mm to 0.75mm) for filtration using reduced gravity to return suspended particles to the ocean through a backwash³ by three (3) backwash pumps (1,500 rpm/7.5kW) – see *Plate 8*.

Plate 8: Transfer of seawater to four (4) DAF units with sand filters (17mm to 0.75mm) for filtration.



- (ix) Pre-treated seawater is transferred by two (2) transfer pumps (125-250m³, 1500 rpm/11kW) through a transfer tank (10,000 liters) and dosed with chlorine dioxide (ClO₂) a combination of sodium hypochlorite (NaClO) or Hepklor, hydrochloric

³ Backwash to clean the sand filters eight (8) times a day

acid (HCl)⁴ or Hepgen, and sodium chloride (NaCl) or Hepklor E. These chemicals are dispensed by the chlorine dioxide generator from the chlorine dioxide batch tank (1,000 liters) located just above the DAF units (i.e., flotation tanks) – see **Plate 9**.

Plate 9: Dosing of pre-treated seawater with chlorine dioxide (ClO₂) dispensed by the chlorine dioxide generator from the chlorine dioxide batch tank.



- (x) The chemicals are stored in three (3) enclosure rooms outside the treatment plant. The process of disinfection of the treated seawater by chlorination with ClO₂ removes or render disease causing organisms inactive (Tay *et al.*, 2006). It is further necessary to achieve free chlorine residual and complete the disinfection purpose by the reducing agent – see **Plate 10**; and

Plate 10: Storage of chemicals in a ventilated enclosure outside the water treatment plant.

⁴ Chlorine dioxide (ClO₂) a combination sodium hypochlorite (NaClO) or Hepklor, hydrochloric acid (HCl)⁴ or Hepgen, and sodium chloride (NaCl) or Hepklor E are stored in an enclosure that houses the Chlorine dioxide (ClO₂) pump just below or next to the DAF tanks

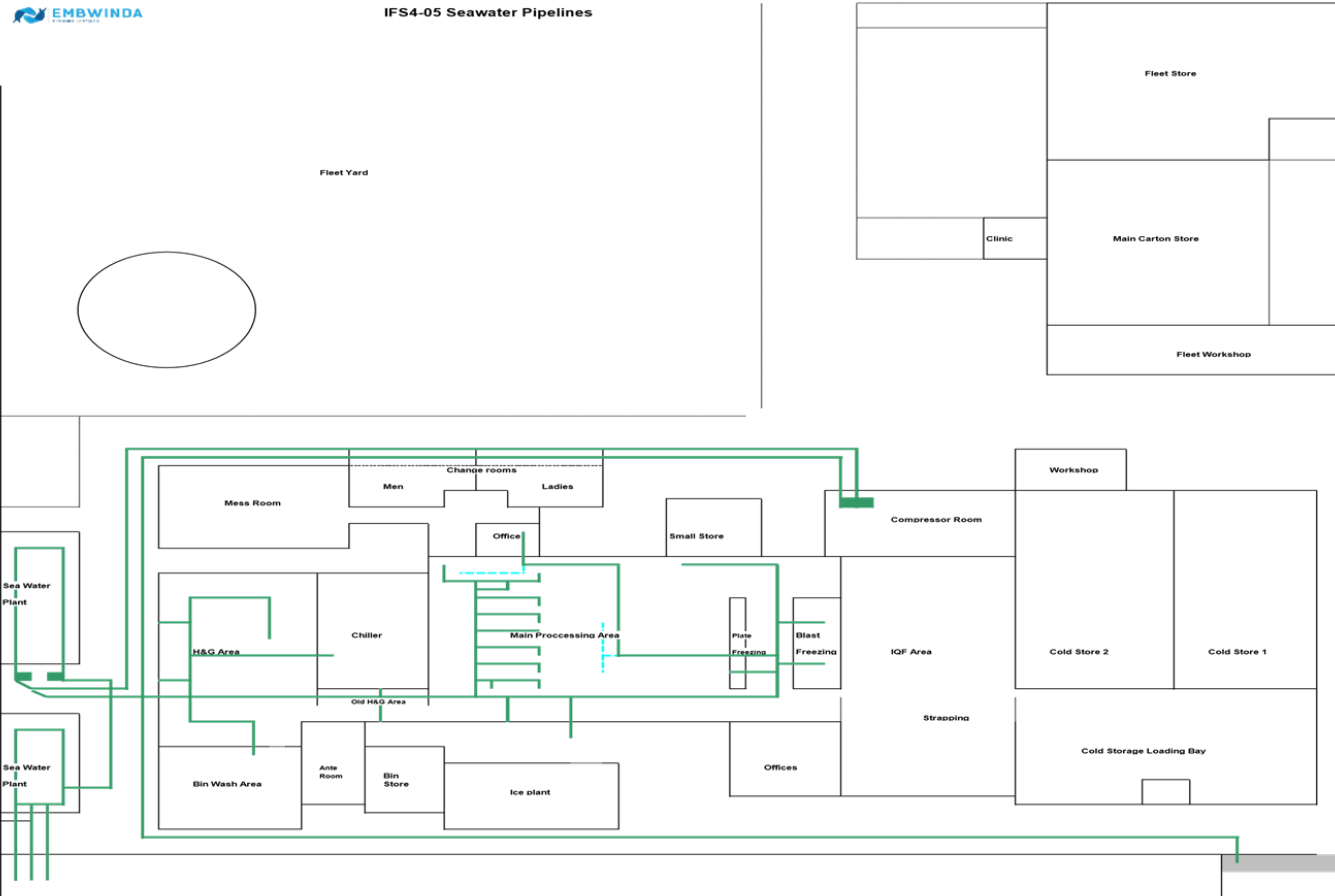


- (xi) Treated and disinfected seawater is transferred to 16 storage tanks with a capacity of 10,000 liters each and thereafter conveyed to the fish processing area by two (2) factory supply pumps (65-200, 2800 rpm/22kW) specially designated conveyance pipelines (160mm) into supply pipelines (25mm) – see *Plate 11*.

Plate 11: Transfer pumping of treated and disinfected seawater to 16 storage tanks of 10,000 liters.



- (i) Lastly, the seawater supply line conveys the treated seawater from the storage tanks to the factory and the fish processing areas in and eventually discharge as wastewater and effluent – see *Figure 2*.



IFS4-05 Pipelines Seawater REV. No: 00 Eff. Date: 15/06/2018

Figure 2: Schematic outlay of the seawater pipelines and conveyance of seawater from the treatment plant to discharge outlet.

Plate 12: Supply and conveyance of treated seawater from storage tanks to the factory and fish processing areas.



2.3 Waste Management, Treatment, Handling and Disposal Activities:

The seawater effluent is collected and conveyed in the factory by a separate conveying pipelines and flows before it is discharged into the Atlantic and through the following areas: (i) head and gut (H&G) area; (ii) chiller, (iii) old head and gut area; (iv) bin wash area, (v) main fish processing area, (vi) wastewater pump into drains, (vii) wastewater discharge out of the factory, (viii) three (3) strainers (8-10 mm) inside the factory located in the ante fouling room and three (3) outside the factory just below the main processing area, (ix) collecting sump, (x) fish offal in skips, and (vii) sump effluent content discharge into the Atlantic Ocean using a discharge outlet. Solid particles are separated by the strainers before the effluent is discharged into the ocean (see *Plate 13*) subject to testing for the parameters recommended in the Wastewater and Effluent Disposal Exemption Permit, Permit No. 727 in *Table 1*

Plate 13: Disposal and screening of wastewater effluent from the factory through a collecting sump.



Table 1: Water quality results of selected effluent samples for parameters and recommended standard limits for industrial effluents

Parameter	Value					Units	Recommended maximum and standard limits for industrial effluents	
	28/03/2018	10/06/2018	20/06/2018	28/05/2019	07/10/2020			
	ALS	NAMWATER	NAMWATER	WATERLAB	ALS			
Dissolved Oxygen (O ₂)	0.5	4.2	4.4			0.5	mg/dm ³	at least 75% saturation
Redox Potential	-405	199	179			174	mV	
pH	7.2	7.6	7.5	8.1	7.3	7		≤5.5 to ≤9.5 or ≤5 to ≤9.7
Electrical conductivity	4310	5210	4730	112	3815	5350	mS/m	≤170
Total Dissolved Solids (det.)	31042	37296	34331	740	31472	36609	mg/dm ³	≤1200
Total Dissolved Solids (calc.)	28877	34907	31691			35845	mg/dm ³	
Total Suspended Solids	138	<1.00	39.2			47	mg/dm ³	≤25
Chemical Oxygen Demand (O ₂)	408	100	228			32	mg/dm ³	≤75
Biological Oxygen Demand (O ₂)	156	5	2			87	mg/dm ³	
Absorbed Oxygen (O ₂)	39	2.9	3.6			19	mg/dm ³	
Sulphate as SO ₄	2107	2400	2320	139	2107	2609	mg/dm ³	≤500 / ≤250
ortho-Phosphate (P)	8.9					2.3	mg/dm ³	
Total Phosphate (P)	8.9	0.16	0.1			2.8	mg/dm ³	
Chloride (Cl)	15899	17400	16100	142	15591	19125	mg/dm ³	≤300
Nitrate (N)	<0.1	<0.5	1.4	5.3	<0.1	<0.5	mg/dm ³	≤11
Nitrite (N)	0.02	<0.1	<0.1	<0.05	<0.05	0.02	mg/dm ³	≤0.9
Total Nitrogen		0.8	1	0.5	<0.1			≤1
Ammonia Nitrogen (N)	18	0.76	0.02			2	mg/dm ³	≤10

Kjedhal Nitrogen (N)	46					11	mg/dm ³	≤1.5
Sodium (Na)	9118	10500	8200	99	8947	11250	mg/dm ³	≤200
Magnesium (Mg)	978			30	1021	1364	mg/dm ³	-
Mg-Hardness (CaCO ₃)	4027	5833	4250			5617	mg/dm ³	
Fat, oil and grease	-	-	<0.1			<2	g/dm ³	≤25
Turbidity in N.T.U.				0.2	0.8			≤1 / ≤5

2.4 Hazardous Substance Treatment, Handling and Storage:

Hazardous substances are used for the treatment of the raw seawater and during the various stages of: (i) dosing of raw seawater with Ultra Flocc 3500 flocculent (Aluminium chlorohydrate coagulant, $Al_2Cl_3H_7O_6$)⁵ before entering the flocculation columns; (ii) dosing the pre-treated seawater with chlorine dioxide (ClO_2) a combination of sodium hypochlorite ($NaClO$) or Hepklor, hydrochloric acid (HCl)⁶ or Hepgen, and sodium chloride ($NaCl$) or Hepklor E dispensed from the chemical dosing pump located next to the DAFF units.

The filtered raw seawater is also transferred to Ammonia (NH_3) heat exchanger plates for cooling down the refrigeration columns, and is an additional hazardous substance.

Therefore, the hazardous substances are subjected to handling during delivery from suppliers, during storage, dosing and dispensing on site for the treatment of seawater abstracted from the Atlantic Ocean. The use of these hazardous substances should be subject to precautionary and first aid measures commensurate to the respective hazard causing potentials – see APPENDIX 1: MATERIAL SAFETY DATA SHEETS OF CHEMICALS USED IN SEAWATER TREATMENT PLANT

⁵ Ultra-Floc 3500 Flocculent is stored in an enclosure just below or next to the saturator

⁶ Chlorine dioxide (ClO_2) a combination sodium hypochlorite ($NaClO$) or Hepklor, hydrochloric acid (HCl)⁶ or Hepgen, and sodium chloride ($NaCl$) or Hepklor E are stored in an enclosure that houses the Chlorine dioxide (ClO_2) pump just below or next to the DAF tanks

3. SAFETY, HEALTH, ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

3.1 Safety, Health and Environmental (SHE) Policy and Standards

Organizational integrity is based on ethics and voluntary compliance to good values, principles, norms and due diligence processes. The proponent by the ECC application applies the precautionary principle and owing to the ECC application is pre-emptive on the polluter-pays principle. The proponent further applies the principle on fundamental rights of employees and contractors as contemplated by the ILO convention.

The proponent has a **Safety, Health and Environmental (SHE) Policy** and it prescribes – see APPENDIX 2: EMBWINDA SAFETY, HEALTH & ENVIRONMENTAL POLICY;

- The operations are conducted in such a responsible manner to protect the **Health** and **Safety** the employees, visitors, service providers and the **Environment**.

The proponent is committed through the Safety, Health and Environment Policy:

- Set and comply with applicable standards and their adaptive review and improvement;
- Assess the safety, health and environmental risks and hazards associated with its work;
- Training and capacity building of employees for the implementation of the SHE system;
- Prevention of pollution, accidents and incidents in the work environment;
- Undertake compliance audits and inspections on policies and procedures;
- Improve material and resource efficiency with regards to power and water usage;
- Safe handling and storage of hazardous chemicals and responsible disposal waste streams; and
- Regular medical surveillance of employees to ensure health workforce.

The proponent follows a market-based accreditation and certification to standards and does not have an environmental and social management system (EMS) nor prescribe to International Standards Organization (ISO) – see APPENDIX 3: ACCREDITATION AND CERTIFICATION OF FISH PROCESSING AND PACKING BY EMBWINDA

FISHING. However, the proponent and its product flow adhere to a traceability system in accordance with Hazard Analysis and Critical Control Point (HACCP), International Featured Standard (IFS) and Marine Stewardship Council (MSC) Sustainable Fisheries Management and Chain of Custody (CoC) certification programmes, and recently the Halaal Certification Schematic System by the MJC Halaal Trust (MJHCT) – which governs Halaal production and/or processing of foods and products scheme.

The following are further examples of standards that might become applicable to the operations of the proponent and management of identified impacts:

- (a) Occupational Health and Safety Management certification (OHSAS 18001:2007) for companies with 5 to 500 employees, now International Standard Organization (ISO) 45001 certification;
- (b) ISO 14001:2015 Environmental Management System (EMS) and the ISO 50001 Energy Efficiency Management Standard;
- (c) Greenhouse Gases (GHG) Protocol Corporate Accounting and Reporting Standard;
- (d) Carbon management systems and Climate related financial disclosures similar to those proposed by the Transition Pathway Initiative (TPI) to meet Paris Agreement Pledges;
- (e) Business Social Compliance Initiative (BSCI) by the Foreign Trade Association (FTA) – a set of principles and values for supply chain management and cascade effect; and workers involvement and protection;
- (f) Forest Stewardship Council (FSC) Forest Management and Chain of Custody (CoC) Certification; and
- (g) B^{UOS}_{SA}D Kosher Certification for food and production processes

3.2 International Featured Standard (IFS) Food Version 6.1, November 2017

The proponent is certified by ProCert A, an accredited certification body for IFS certification, for compliance to processing activities that meet the requirements set out by **IFS Food Version 6.1 Standard**. This standard is regarded for the purposes of the ESMMP herein as a suitable

management system for the implementation of management and mitigation actions and measures through:

- **IFS Policies, Procedures and Forms** with distinctive documentation references from **IFS1-01 to IFS5-11-05** developed for the purposes of implementing and monitoring the objectives related to maintaining and improving the safety, legality, integrity and quality of products manufactured see - APPENDIX 4: MASTER DOCUMENTATION LIST OF IFS POLICIES, PROCEDURES AND FORMS BY EMBWINDA FISHING.
- **IFS1-01 Responsibility to Management** through the **IFS1-02 Corporate Structure** should discharge the function demonstrating that activities in the processing of fish products adhere to the development, implementation, and continuing improvement of food safety and quality management.
- **IFS1-01-2 Corporate Policy** provides for the establishment of corporate objectives including environmental objectives and related to:
 - (a) Customer focus;
 - (b) Environmental responsibility;
 - (c) Sustainability;
 - (d) Ethics and personnel responsibility; and
 - (e) Products requirements (including product safety, quality, legality, process and specification).

Therefore, **Environmental Responsibility**, *amongst others*, is an existing policy objective of the proponent that seeks sound management of conservation practices and by minimizing the environmental impact of the operations and risk to community health. The procedures and forms associated with IFS Food 6.1 standard and those immediately applicable to the proposed activity are listed and documented in accordance with

4. INSTITUTIONAL ARRANGEMENTS, ROLES AND RESPONSIBILITIES

It is currently expected under IFS Food 6.1 that the proponent, employees and contractors should be responsible for the implementation of the mitigation and management measures proposed herein and further adhere to the conditions set in the subsequent ECC. Competences and responsibilities, including deputation of responsibility shall be defined in **IFS1-02-2 Responsibilities and Management Authority** – see *Figure 3*.

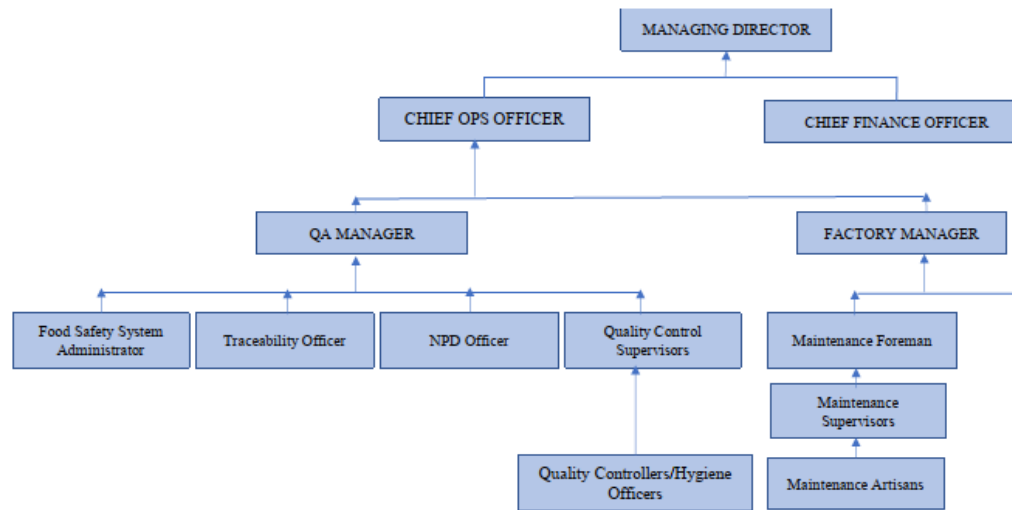


Figure 3: IFS-02-1 Organization Chart - Food Safety Team

- The Food Safety Team, led by the Food Safety Team Leader of the proponent is directly responsible for the operations of the seawater abstraction and treatment and wastewater treatment.
 - o Subsidiary to the above, the Quality Control Office of the proponent is responsible for the implementation and monitoring of all aspects related to the ESMMP is supported by the prevailing ESMS (i.e., Safety, Health and Environmental policy, ascribed IFS Food 6.1 Standard).
- The Managing Director, the Financial Manager and the Chief Operations Officer, though not directly involved with the proposed activity are indirectly responsible for the implementation of safety, health, environmental and social management measures related to other line functions.

5. SUMMARY OF IMPACTS

Likely impacts from the proposed activity were identified and analyzed using the sustainability using a combination of Performance Standards on Environmental and Social Sustainability of the International Finance Corporation (IFC) and the Global Reporting Initiative (GRI). The identified impacts were further analysed by their source within the process of the proposed activity and the receiving environment of the effects of the likely impact (*Table 2*).

Table 2: A summary of the identified impacts and the proposed mitigation measures

Receiving environment	Standard	Source	Impacts	Significance	Mitigation measure
SOCIO-ECONOMIC ENVIRONMENT	Ethics, Environmental and Socio-economic compliance	Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	Ethics, Environmental laws, Employment and labour laws	Positive (medium) Positive (medium) Positive (medium)	Environmental and Social Management System (ESMS) and Remediation Procedures
	Economic Performance, Market Presence and Procurement Practices	Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	Economic performance, Market presence, Procurement practices	Positive (medium) Positive (medium) Positive (medium)	Ensure sustainable fishing rights and quota's Procurement Policy (i.e., policies, procedures, protocols and guidelines)
	Labour and Working Conditions	Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	Occupation health and safety (i.e., odour pollution)	Negative (medium)	Occupational Health and Safety Policy, PPE, Designated walkways (i.e., policies, procedures, protocols and guidelines for atmospheric air pollution, noise pollution, traffic and hazardous substances) International Standard Organization (ISO): 45001
		Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and	Employment creation, Remuneration and working conditions	Positive (high) Positive (high)	Human Resources Policy (i.e., employment policies, procedures, protocols and guidelines) Remuneration Policy (i.e., remuneration policies, procedures, protocols and guidelines)

		Wastewater Discharge	Training and education	Positive (low)	Training and Capacity Building Policy (i.e., training and capacity building policies, procedures, protocols and guidelines)
	Materials and Resource Efficiency	Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	Resource efficiency Water usage Energy usage	Negative (medium) Negative (medium) Negative (medium)	Cleaner alternative technology Water management plan, cleaner alternative technology and recycling Energy Plan
PHYSICO-CHEMICAL, BIOLOGICAL ENVIRONMENT AND SOCIO-ECONOMIC	Community, Customer Health and Safety	SOURCE: Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	Ambient water quality	Negative (high)	Primary-, secondary-, and tertiary treatment or recycling of wastewater (i.e., alternative treatment technology)
	Biodiversity and Sustainable Management of Natural Resources		Biodiversity loss	Negative (high)	Primary-, secondary-, and tertiary treatment or recycling of wastewater (i.e., alternative treatment technology)
	Community Health	SOURCE: Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	Bathing Quality	Negative (medium)	Primary-, secondary-, and tertiary treatment or recycling of wastewater (i.e., alternative treatment technology)
	Effluents, Waste and Pollution Prevention	SOURCE: Seawater Abstraction,	Occupational health and safety (i.e., Noise pollution, toxic,	Negative (medium)	Occupational Health and Safety Policy, PPE, Designated walkways (i.e., policies, procedures, protocols and

	Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	<p>hazardous, harmful substances and traffic)</p> <p>Oil spills Negative (medium)</p> <p>Rust and overgrowth Negative (medium)</p>	<p>guidelines for atmospheric air pollution, noise pollution, traffic and hazardous substances)</p> <p>International Standard Organization (ISO): 45001</p> <p>Oil spills Contingency Plan and Emergency Preparedness (i.e., policies, procedures, protocols and guidelines for oil spills)</p> <p>Infrastructure Maintenance Plan and Anti-fouling of the facilities and pipelines</p>
	SOURCE: Seawater Abstraction, Treatment, Storage, Conveyance, Drainage and Wastewater Discharge	<p>Greenhouse Gases Negative (low) (GHGs)</p> <p>Climate change and sea-level rise Negative (low)</p>	<p>GHG inventory and mitigation strategy and alternative technology to minimize GHG emissions</p> <p>Climate Change Emergency Response and Adaptation Strategy including retreat where possible or infrastructure buffering</p>
Positive	Low	Medium	High

The proposed activity is regarded as highly socio-economically beneficial in terms of (i) compliance to relevant policies, laws and regulations, (ii) economic performance, presence in the market and sound procurement practices and (iii) labour and working conditions. However, there are anticipated negative environmental impacts in respect of (i) materials and resource efficiency, (ii) community, customer health and safety, (iii) biodiversity and sustainable management of natural resources, and (iv) effluents, waste and pollution prevention which if not mitigated have worse and cumulative consequences.

6. MITIGATION AND MANAGEMENT

The monitoring plan specifies environmental monitoring requirements to monitor the identified impacts in order to verify the performance of the management actions by the proponent. A comprehensive baseline assessment of the bio-physical and socio-economic condition is beyond the scope of the **SCOPING REPORT (VOLUME 1)** and the associated **ESMMP (VOLUME 2)** herein, and will be established within the first six (6) months and after the award of the ECC.

However, this ESMP ensures: -

- compliance with regulatory authority stipulations at national and local authority level;
- allocation of resources and responsibilities for the activities identified consistent with the significance of the project impacts;
- verify environmental performance through information on impacts;
- respond to changes, unforeseen events during project implementation; and
- provide feedback for continual improvement in the management of the impacts.

6.1 Management and Monitoring Objectives

The IFC's Sustainability Framework⁷ that comprises of Performance Standards on Environmental and Social Sustainability informs the setting of environmental and social quality objectives for the proposed activity, and their application to mitigate and manage the identified impacts in *Table 3*.

⁷ International Finance Corporation (IFC), World Bank Group – Performance Standards on Environmental and Social Sustainability, January 1, 2012

Table 3: Environmental and social management and monitoring objectives

Performance standard	Environmental and social manage objective	Application
Ethics, environmental and socio-economic compliance	<ul style="list-style-type: none"> - Identify and evaluate environmental and social risks and impacts of the proposed activity; - To adopt a mitigation hierarchy to anticipate and avoid, and where avoidance is not possible minimize, and where residual impacts remain. Compensate/offset for risks and impacts to workers, affected communities, and the environment; - To improve environmental and social performance through the effective use of available management systems; - To provide means for grievance procedures by adequate engagement with affected communities; and - To promote compliance with applicable national laws. 	<ul style="list-style-type: none"> - <i>The proponent with relevant authorities and third-party certification bodies will conduct an environmental and social assessment, and establish and maintain an ESMS.</i>
Economic Performance, Market Presence and Procurement Practices	<ul style="list-style-type: none"> - To generate, distribute and retain direct and indirect economic value generated (EVG) locally; - To promote equitable wages and compensation subject to minimum wage rules through non-discrimination practices; and - To promote procurement and practices that benefit suppliers local to the geographic location of the proposed activity. 	<ul style="list-style-type: none"> - <i>The proponent will operate within a known feasibility and risk assessment, including risks and opportunities related to climate change, and established implications of the proposed activity on its operations, revenue or expenditure.</i>
Labour and Working Conditions	<ul style="list-style-type: none"> - To promote fair treatment, non-discrimination, and equal opportunity of workers; and - To promote safe and healthy working conditions, and maintain the health of workers. 	<ul style="list-style-type: none"> - <i>The proponent will adopt and implement human resources policies and procedures appropriate to its size and workforce in compliance with national laws.</i>

Materials and Resource Efficiency	<ul style="list-style-type: none"> - To promote sustainable use of resources, including energy and water. 	<ul style="list-style-type: none"> - <i>The proponent will adopt and implement technically and financially feasible and cost-effective measures for improving efficiency in the consumption of energy, water as well as other resources and material inputs.</i> - <i>The proponent will adopt resource efficiency and cleaner production (RECP) in product design and production processes.</i> - <i>The proponent will benchmark and compare, with best available data, the relative level of resource consumption.</i>
Customer Health and Safety; and Community Health	<ul style="list-style-type: none"> - To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from the proposed activity; and - To anticipate and avoid adverse impacts on the health of personnel and community in both routine and non-routine circumstances. 	<ul style="list-style-type: none"> - <i>The proponent will adopt establish preventative and control measures consistent with good international industry practice (GIIP).</i> - <i>The proponent will design, construct, operate and decommission structural elements or components of the proposed activity in accordance with GIIP.</i> - <i>The proponent will avoid or minimize the potential for community exposure to hazardous materials.</i> - <i>The proponent will identify risks and impacts on priority ecosystem services that may exacerbated by climate change.</i>
Biodiversity and Sustainable Management of Natural Resources	<ul style="list-style-type: none"> - To protect and conserve biodiversity; - To maintain the benefits from ecosystem services and provisioning; and - To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities. 	<ul style="list-style-type: none"> - <i>The proponent will consider threats related to loss, degradation, fragmentation of important biodiversity areas, intentional introduction of alien species and overexploitation of natural resources.</i> - <i>The proponent will, where possible, include biodiversity offset within its mitigation hierarchy, and implemented to achieve measurable conservation outcomes with no net loss but net gain of biodiversity. The design of the biodiversity offset should adhere to “like-for-like” or “better” principle and applied with best available information and current practices.</i> - <i>The proponent will avoid impacts on biodiversity through the identification and protection of set-asides (e.g., High Conservation Value, systematic conservation planning).</i>

		<ul style="list-style-type: none"> - <i>The proponent will adopt a robust, appropriately designed, and long-term biodiversity monitoring and evaluation programme integrated in the ESMS.</i>
Effluents, Waste and Pollution Prevention	<ul style="list-style-type: none"> - To avoid and minimize pollution from the proposed activity; and - To reduce GHG emissions related to the proposed activity. 	<ul style="list-style-type: none"> - <i>The proponent will consider ambient conditions and apply technically and social impacts and pollution prevention principles and techniques that best suited to avoid, or where avoidance is not possible, minimize adverse impacts on human health, community and the environment.</i> - <i>The proponent will consider threats related to introduction of alien species, hydrological changes, nutrient loading and pollution.</i> - <i>The proponent will adopt GIIP alternatives for the environmentally sound disposal of wastes while adhering to the industrial limits.</i> - <i>The proponent will adopt sound practices for the transportation, handling, storage, and use of hazardous materials for the proposed activity.</i> - <i>The proponent will consider alternatives and implement technically and financially feasible and cost-effective options to reduce GHG emissions related to the proposed activity.</i> - <i>The proponent, when applicable, will quantify direct emissions and indirect emissions associated with off-site production of energy use by the proposed activity.</i> - <i>The proponent will quantify GHG emissions in line with internationally recognized methodologies and good practice</i>

Monitoring of environmental and social quality objectives related to the proposed activity are informed by relevant sustainable development goals (SDGs) 6, 12, 13 and 14 as getting back to normalcy after COVID-19 insists measuring sustainability impacts (Curtis and Sheehan, 2020; van Zanten and van Tulder, 2020) – see **Table 4**.

Table 4: A summary of the applicable sustainable development goals, their targets and indicators to inform environmental and social management objectives for sea water abstraction and waste water treatment.

Sustainable development goal	Target	Indicator
SDG 6: Ensure availability and sustainable management of water and sanitation for all	<i>Target 6.3: By 2030, Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.</i>	<u>Indicator 6.3.1:</u> Proportion of domestic and industrial wastewater flows safely treated
		<u>Indicator 6.3.2:</u> Proportion of bodies of water with good ambient water quality
Sustainable Development Goal 12: Ensure sustainable consumption and production patterns	<i>Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their lifecycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.</i>	<u>Indicator 12.4.2:</u> (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated
	<i>Target 12.5: By 2030, substantially reduce waste generation through protection, reduction, recycling and reuse</i>	<u>Indicator 12.5.1:</u> National recycling rate, tons of material recycled
	<i>Target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</i>	<u>Indicator 12.6.1:</u> Number of companies publishing sustainability reports

<p>SDG 13: Take urgent action to combat climate change and its impact</p>	<p>Target 13.2: <i>Integrate climate change measures into national policies, strategies and planning.</i></p>	<p><u>Indicator 13.2.2:</u> Total greenhouse gas emissions per year</p>
<p>SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	<p>Target 14.1: <i>By 2024, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.</i></p>	<p><u>Indicator 14.1.1:</u> (a) Index of coastal eutrophication; and (b) plastic debris density</p>

6.2 Mitigation Measures and Monitoring Plan

Table 5: A summary of management actions and monitoring requirements for the identified impacts and the applicable prevailing IFS policy or procedure

Standard	Impacts	Mitigation measure (Key Performance Indicator)	Description of the mitigation measure	Responsibility (Budget Vote)	Implementation Schedule	Monitoring (sampling)	IFS Policy or Procedure
Ethics, Environmental and Socio-economic compliance	Ethics,	Environmental and Social Management System (ESMS) Remediation Procedures	Develop an integrated <u>Environmental and Social Management System (ESMS)</u> consistent with international best-practice and the current sustainability trend. The proponent should incorporate anti-corruption and conflicts of interest and instil awareness and training programmes on the corporate policy for its employees and persons linked to the organization activities, products and services. Financial and in-kind contributions as corporate social responsibility should be subject to good business ethics.	IFS1-01 IFS1-02 Quality Control Department	IFS5-04 Ongoing	IFS5-04 Annual	IFS1-01-1
	Environmental laws		Develop a comprehensive <u>Environmental and Social Management Plan</u> in order to mitigate, manage and enhance impacts and opportunities of the identified in this scoping report as part of the companies				IFS1-03

			ESMS system consistent with international best-practice. The proponent should instil necessary <u>Remediation Procedures</u> in events of non-compliance to laws and regulations related to social and economic area.			
Economic Performance, Market Presence and Procurement Practices	Economic performance	Ensure sustainable fishing rights and quota's	The proponent is reliant on the fishing rights and quotas owned by its shareholders which are subject to renewal by the Ministry of Fisheries and Marine Resources after a specified period of seven (7), 15, 20 or 25 years. The proponent should develop precautionary and innovative measures for the <u>Application of Fishing Rights</u> for the attainment of the fishing rights through the current shareholders or develop <u>Closure Plans</u> in the likely event of non-allocation of rights.	Marketing, Finance and Procurement Department	Ongoing	Annual
	Market presence	Value addition strategy	Further, development of policies or guidelines on the engagement with businesses outside its principal business operation(s) and charitable organizations will be beneficial. The market presence in Spain is determined by the shareholding of the current investors, and can be enhanced by a further value addition to secure diversity of product distribution destination.			IFS4-03

	Procurement practices	Procurement Policy (i.e., policies, procedures, protocols and guidelines)	If possible, the development of a <u>Procurement Policy</u> and procedures or Statement in line with national preferential procurement and empowerment policies.				
Labour and Working Conditions	Occupational health and safety (i.e., odour pollution)	Occupational Health and Safety Policy, PPE, Designated walkways (i.e., procedures, protocols and guidelines for atmospheric air pollution, noise pollution, traffic and hazardous substances) International Standard Organization (ISO): 45001	The proponent should develop <u>Occupational Health and Safety Policy</u> , guidelines or procedures to minimize accidents, injuries and diseases caused by safety hazards at the seawater abstraction inlet, the seawater and wastewater pre-treatment quays, holding pits and in the seawater treatment facility besides injuries from hazards related to water conveyance and drainage identified for the fish processing area through HACCP. The proponent should provide safe and healthy working environment and take into account the identified hazards and preventative and protective measures including the provision of personal protective equipment (PPE) and enclosure around quays, water pump areas, holding pits and drainage tunnels. The proponent should develop a system of <u>Documentation and Reporting</u> of occupational accidents, injuries and incidents, and that related to <u>Emergency Preparedness, Prevention and Response Measures</u> . This should also apply	Human Resources Department	6 months	Bi-annual	IFS1-03 IFS3-01 IFS4-07 IFS2-01 IFS2-02

Employment creation	Human Resources Policy (i.e., employment policies, procedures, protocols and guidelines)	<p>to primary suppliers and service providers and if not, select suppliers and service providers who are able to demonstrate acceptable occupational health and safety standards.</p> <p>If possible, the proponent should subscribe to the ISO standard on Occupational Health and Safety (formerly Occupational Health and Safety Management Certification (OHSAS 18001:2007) for companies with 5 to 500 employees now <u>International Standard Organization (ISO): 45001</u>.</p> <p>The proponent shall not use forced labour or child labour – If possible, the development of a <u>Human Resources Policy</u> and procedures or Statement appropriate to the size and workforce directly and indirectly engaged with the company. The proponent should where possible practice principles of non-discrimination, equal opportunities and fair treatment in respect employment relationship, recruitment and hiring, terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices. The proponent should take measures related to employment provision to prevent and address harassment, intimidation, exploitation and especially</p>	Ongoing	Annual
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Remuneration and working conditions	Remuneration Policy (i.e., remuneration policies, procedures, protocols and guidelines	<p>related to women and the disable individuals. The proponent should develop a grievance mechanism for employees and contractors as a medium to raise their workplace concerns.</p> <p>None – If possible, the development of a <u>Remuneration Policy</u> and procedures or Statement appropriate to the size and workforce directly and indirectly engaged with the company. The proponent should where possible practice principles of fair compensation including wages and benefits and benefits related to working conditions. The proponent should take measures related to remuneration and working conditions to prevent and address harassment, intimidation, exploitation and especially related to women and the disable individuals. This should also apply to primary suppliers and service providers and if not, select suppliers and service providers who are able to demonstrate acceptable standards related to employees and contractor’s remuneration and working conditions.</p>	Ongoing	Annual	
Training and education	Training and Capacity Building Policy (i.e.,	<p>None – If possible, the development of a <u>Training and Capacity Building Strategy</u> and <u>Standard Operating Procedures (SOPs)</u> procedures or Statement appropriate to the</p>	Ongoing	Bi-annual	IFS3-02

		training and capacity building policies, procedures, protocols and guidelines)	development of skills commensurate to the size and workforce and expert knowledge and skills needed by those directly and indirectly engaged with the seawater abstraction and treatment, and wastewater and effluent treatment.				
Materials and Resource Efficiency	Resource efficiency	Cleaner alternative technology	The proponent should operate the treatment facilities for at least six (6) months for the collection of predetermined parameters on the extent of resource use towards selecting appropriate <u>alternatives</u> to the current operations.	Quality Control Department	6 months	Monthly	IFS5-06-1
	Water usage	Water management plan, cleaner alternative technology and recycling	The proponent should develop a <u>Water Management Plan</u> which entails the monitoring of baseline water use and installation of water saving technology (i.e., flowmeters, leak detection devices and water efficiency technology) at critical control points. If viable and feasible, the transition to water efficient technology for seawater and potable water, re-use and recycling wastewater should be considered after the monitoring period. The water plan will be used to determine the transition to suitable wastewater reclamation, recycling and reuse technology.		6 months		
	Energy usage	Energy Plan	The proponent should develop a simplified <u>Energy Plan</u> that entails monitoring of energy use		6 months		

			over a period of six (6) months. This will translate into the installation or instrumentation for metering and leak detection besides other energy saving technology at critical control points. If viable and feasible, the transition to renewable energy sources should be considered after the monitoring period.				
Community, Customer Health and Safety	Ambient water quality	Primary-, secondary-, and tertiary treatment or recycling of wastewater (i.e., alternative treatment technology)	The proponent should subject wastewater from the fish processing facility to <u>pre-treatment of and primary treatment of the wastewater</u> to reduce the contaminant load and remove any possible oil or grease from the effluent. The proponent should adopt a viable, appropriate and efficient method and clean technology for the <u>secondary and tertiary treatment or recycling of wastewater</u> before discharging into the receiving environment.	Operations Department	6 months	Monthly	IFS4-08 IFS5-06-1
Biodiversity and Sustainable Management of Natural Resources	Biodiversity loss	Primary-, secondary-, and tertiary treatment or recycling of wastewater (i.e., alternative treatment technology)	Pre-treatment of and primary treatment of the seawater and wastewater to reduce the contaminant load, besides the removal of any possible contaminants and oil or grease from the effluent. A <u>Biodiversity Action and Monitoring Plan</u> should be developed for the assessment of the type of micro-, meso- and macro fauna trapped at the seawater inlet screening device. This monitoring plan should include, if possible, the measurements on dispersal characteristics,	Quality Control Department	6 months	Monthly	IFS4-08 IFS5-06-1

			water characteristics, and benthic characteristics at both the inlet of the seawater and effluent discharge outlet. The proponent should adopt a viable, appropriate and efficient method and clean technology for the <u>secondary and tertiary treatment or recycling of wastewater</u> before discharging into the receiving environment.				
Community Health	Bathing Quality	Primary-, secondary-, and tertiary treatment or recycling of wastewater (i.e., alternative treatment technology)	Pre-treatment of and primary treatment of the wastewater to reduce the contaminant load and remove any possible oil or grease from the effluent. A <u>Monitoring Plan</u> should be developed for the assessment of characteristics and composition of the effluent before discharge ⁸ (i.e., solubility, density, oxygen demand, nutrients, metals, viruses, bacteria, yeasts, parasites, toxicity and physico-chemical and biological persistence and susceptibility), accumulation and transformation of the water characteristics. This Monitoring Plan should include, if possible, the	Operations and Quality Control Departments	6 months	Monthly	IFS4-08 IFS5-06-1

⁸ Annex II and Annex III of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other matter.

			<p>measurements on dispersal characteristics, water characteristics, and benthic characteristics at both the inlet of the seawater and effluent discharge outlet of the Fishing Harbour within the limits of the Port of Walvis Bay. The proponent should adopt a viable, appropriate and efficient method and clean technology for the <u>secondary and tertiary treatment or recycling of wastewater</u> before discharging into the receiving environment.</p>				
Effluents, Waste and Pollution Prevention	Occupational health and safety (i.e., Noise pollution, toxic, hazardous, harmful substances and traffic)	Occupational Health and Safety Policy, PPE, Designated walkways (i.e., policies, procedures, protocols and guidelines for atmospheric air pollution, noise pollution, traffic and hazardous substances) International Standard	<p>The proponent should remove solids as soon as possible from the wastewater and adopt a viable, appropriate and efficient method and technology for the <u>secondary and tertiary treatment or recycling of wastewater</u> before discharging into the receiving environment.</p> <p>The proponent should develop a code of conduct and <u>SOPs</u> based on the safety sheets of the various chemicals used during purification and associated storage and transportation. The proponent should adopt a policy of <u>personal protective equipment (PPE)</u> for employees and contractors exposed to hazards (i.e., noise, toxic, harmful or hazardous substances). The proponent should where possible separate traffic corridors from <u>designated walkways</u> for workers and contractors.</p>	Operations and Quality Control Departments	6 months	Monthly	IFS4-05 IFS4-08 IFS4-11 IFS4-12 IFS5-04

	Organization (ISO): 45001					
Oil spills	Oil spills Contingency Plan and Emergency Preparedness (i.e., policies, procedures, protocols and guidelines for oil spills)	The proponent should develop an <u>Oil-Spill Contingency Plan</u> for emergency preparedness and response procedures without foreclosing <u>SOPs</u> for oil-spills.	Operations Department	12 months	Bi-annual	IFS5-11
Rust and overgrowth	Infrastructure Maintenance Plan and Anti-fouling of the facilities and pipelines	The proponent should develop an <u>Infrastructure Maintenance Plan and Anti-fouling of the facilities and pipelines</u> that coincides with the closing season or the quiescent phase of the annual fish harvesting and subsequent fish processing in October.	Operations Department	Ongoing	Bi-annual	IFS4-04
Greenhouse Gases (GHGs)	GHG inventory and mitigation strategy and alternative technology to minimize GHG emissions	The proponent should develop a <u>GHG Inventory</u> and an associated <u>GHG Mitigation Strategy</u> to reduce emissions. These mitigation measures might include the fitting of technology to minimize GHGs and the carbon footprint of the facility	Quality Control Department	Immediate	Monthly	
Climate change and sea-level rise	Climate Change Emergency	The proponent should develop a Climate Change Emergency Response and Adaptation Strategy including retreat where	Quality Control Department	Immediate	Bi-annual	

Response and possible or infrastructure buffering
Adaptation mainstreaming it to the local Climate
Strategy Change Adaptation Plan
including
retreat where
possible or
infrastructure
buffering

6.3 Sample parameters and sampling methodology

The summary of monitoring parameters and sampling methodology for an analytical sampling plan to monitor the impacts generated by the proposed activity in accordance with recommended maximum and standard limits for industrial effluents are presented in **Table 6** below. Effluent standards by the Department of Water Affairs, MAWLR will inform the implementation, monitoring and improvement of **IFS5-06-1 Analytical Sampling Plan** – see APPENDIX 5: EFFLUENT STANDARDS FOR THE WATER ACT (ACT NO. 54 OF 1956) AND WATER RESOURCE MANAGEMENT ACT (ACT NO. 11 OF 2013).

Table 6: Sampling methodology and parameters for the Monitoring Plan of the ESMP

Environmental parameter	Sampling methodology or source of the data
Climate and meteorology	Ministry of Works and Transport, Namibia Meteorological Service
Ambient air levels	Ambient air quality will be measured downwind, upwind and downwind using the appropriate equipment for NO ₂ , CO, CO ₂ , SO ₂ , CH ₄ , H ₂ S in ppm and O ₂ in %, relative humidity and temperature levels and suspended particulate matter (SPM) in µg/m ³
Particulate matter	PM _{2.5} and PM ₁₀ levels will be measured
Noise level	Noise levels will be measured using a sound level meter at four exposure points for all activities pertaining to operations of seawater abstraction, treatment and storage, water conveyance and use in transformation of fish resources to value chains. Parameters will entail minimum noise levels (L _{min}), maximum noise levels (L _{max}), and as well as noise exposure levels (L _{exp}) between the hours of operation
Soil and geology	Sediment samples will be collected from the sea-bottom at geo-referenced locations of seawater abstraction and discharge using poly-ethylene bags wrapped in aluminum foil. Samples for microbial analysis will be collected in 100 ml McCartney bottles and stored in a cool box. Two sediment samples should be collected for a composite sample.
Surface and ground water	Water samples will be collected from geo-referenced locations of water sources on the site and in the fish processing facility. Clean sampling bottles and sterile 20 ml plastic containers will be used to collect water samples at designated geo-referenced locations. Amber bottles of 250 ml capacity will be used collect samples for heavy metal analysis. This samples should be treated with concentrated nitric acid to pH 2. Physicochemical parameters prone to change should be measured daily using portable field meters for pH, Total Dissolved Solids (TDS), Dissolved Oxygen (DO), and Temperature. The samples should be kept cool until analyses.
Seawater samples	Seawater samples will be collected from geo-referenced locations of seawater abstraction and discharge using bottles. Amber bottles of 250 ml capacity will be used collect samples for heavy metal analysis. This samples should be treated with concentrated nitric acid to pH 2. Physicochemical parameters prone to change should be measured daily using portable field meters for pH, Total Dissolved Solids (TDS), Dissolved Oxygen (DO), and Temperature. The samples should be kept cool for further analysis analyses.

<p>Flora and fauna</p>	<p>Seawater samples will be collected from geo-referenced locations of seawater abstraction and discharge. Biological parameters prone to change should be measured monthly for ascertaining a species list to obtain the full assemblage of the species and unidentified species should be collected by for further analysis and identification</p>
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7. TRAINING AND CAPACITY BUILDING

Training and capacity building is an ongoing process and training requirements will be identified by the line managers to ensure that there is sufficient capacity to implement the management actions of the ESMP.

A training programme cognizant to that of the prevailing ESMS, and especially that of the existing **IFS3-02 Competence, Awareness and Training** procedure will be adopted and reviewed during implementation and monitoring.

8. DOCUMENTATION AND RECORD KEEPING

Documentation procedures will follow that of the existing ESMS including the requirements in respect of the **IFS2-01 Document Control**, **IFS2-02 Record Control** and **IFS2-2 Master Document List**, and improvements to these procedures will be reviewed during implementation and monitoring. All records relating to the implementation of the ESMP will be maintained and as far possible should include photographs of the site prior to and after the proposed activity. Monthly checklist will be developed after the approval of the ESMP and the award of the ECC for the purposes of implementing the ESMP and its Monitoring Plan.

The contractual agreements between the proponent and contractors and service providers for the construction of the manufacturing should comply with the provisions of the ESMMP.

9. CLOSURE PLAN

Closure of the proposed activity is not envisaged in the short-term to medium-term, which if at all it exists will be triggered by the closing of the fish processing facility. However, necessitated closure of the seawater abstraction facility or wastewater treatment facility will be subject to rehabilitation in accordance with the applicable restoration and rehabilitation hierarchy. The closure plan will include the following information:

- Description of closure aims and objectives of the proposed activity related to the environmental and social setting;
- A locality plan with coordinates to indicate the exact area subject to closure;
- A summary of relevant regulatory requirements, including conditions documented in the SCOPING REPORT (VOLUME 1), ESMMP (VOLUME 2) and the associated implementation after the award of ECC;
- Detailed closure implementation and scheduling of decommissioning activities;
- Arrangement of temporary closure or suspension of associated activities in fish processing ('care and maintenance');
- An updated environmental assessment and the identification of environmental and social impacts and their residual effects;
- Data and information of baseline conditions and their monitoring since the award of the ECC for associated activities of for associated fish processing activity;
- Details of management and mitigation measures of environmental and social impacts and their residual effects;
- Details of competence and responsible entity or persons to implement the management and mitigation measures; and progressive remediation and rehabilitation;
- Details of performance guarantee or security provided, applicable to the prevailing standards and regulatory requirements, and other compensatory measures;
- Documentation and reporting of data and information after closure;
- Details of the public participation procedures and stakeholder engagement; and
- Technical Reports as annexes to the closure plan.

10. REFERENCES

- Curtis, J., & Sheehan, J. (2021, February 01). Getting Businesses Back on Track with the SDGs. *International Institute for Sustainable Development (IISD): SDG Knowledge Hub*.
- Lochner, P. (2005). *Guideline for Environmental Management Plans. CSIR Report No ENV-S-C 2005-053 H*. Cape Town, South Africa: Republic of South Africa, Provincial Department of the Western Cape, Department of Environmental Affairs and Development Planning.
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APPENDICES

**APPENDIX 1: MATERIAL SAFETY DATA SHEETS OF CHEMICALS
USED IN SEAWATER TREATMENT PLANT**



MATERIAL SAFETY DATA SHEET

HEPGEN

INTERNATIONAL STANDARD MATERIAL SAFETY DATA SHEET FOR
 CHEMICAL PRODUCTS WHICH CONFORMS TO ISO 11014-1 1994

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION

Name : HEPGEN Code : 0265 / GHS
 In emergency contact: Heat Exchange Products at +264 61 230027
 Head Office: 2-3 Brahman Street, Northern Industry, Windhoek, Namibia

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance Common Name: Spirits of salts
 Synonyms: Nil

HAZARDOUS COMPONENTS

CAS. No.	COMPONENT	RANGE % CONTENT
7647 01 - 0	Hydrochloric Acid	30 - 33%

SECTION 3. HAZARDS IDENTIFICATION

Listing as per SABS 0265: 1999

KEY

Inhalation	:	3 – Toxic	GHS: Cat. 1 - Danger	4 : Very toxic.
Skin	:	2 – Harmful	GHS: Cat. 1 - Danger	3 : Toxic.
Ingestion	:	3 – Toxic	GHS: Cat 2 – Acute	2 : Harmful.
Environmental	:	3 – Toxic	GHS: Cat 3 – Acute	1 : Slight risk.
				0 : Normal material.

SECTION 4. FIRST AID MEASURES

Inhalation : Move patient to fresh air. Administer oxygen if necessary. Obtain medical attention without delay.
 Skin : Immediately wash affected area. If necessary obtain medical attention.
 Eyes : Immediately flush with water. Seek medical attention immediately.
 Ingestion : Extremely dangerous, obtain medical attention immediately.

SECTION 5. FIRE FIGHTING MEASURES

This product is neither flammable nor explosive.

MATERIAL SAFETY DATA SHEET

HEPGEN 15

INTERNATIONAL STANDARD MATERIAL SAFETY DATA SHEET FOR CHEMICAL PRODUCTS WHICH CONFORMS TO ISO 11014-1 1994

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION

Name : HEPGEN 15 Code : 0265 / GHS
 In emergency contact: Heat Exchange Products at +264 61 230027
 Head Office: 2-3 Brahman Street Northern Industry, Windhoek, Namibia

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance Common Name: Spirits of salts
 Synonyms: Nil

HAZARDOUS COMPONENTS		
CAS. No.	COMPONENT	RANGE % CONTENT
7647 01 - 0	Hydrochloric Acid	15%

SECTION 3. HAZARDS IDENTIFICATION

Listing as per SABS 0265: 1999

Inhalation	:	3 – Toxic	GHS: Cat. 1 - Danger	4 : Very toxic.
Skin	:	2 – Harmful	GHS: Cat. 1 - Danger	3 : Toxic.
Ingestion	:	3 – Toxic	GHS: Cat 2 – Acute	2 : Harmful.
Environmental	:	3 – Toxic	GHS: Cat 3 – Acute	1 : Slight risk.
				0 : Normal material.

SECTION 4. FIRST AID MEASURES

Inhalation : Move patient to fresh air. Administer oxygen if necessary. Obtain medical attention without delay.
 Skin : Immediately wash affected area. If necessary obtain medical attention.
 Eyes : Immediately flush with water. Seek medical attention immediately.
 Ingestion : Extremely dangerous, obtain medical attention immediately.

SECTION 5. FIRE FIGHTING MEASURES

This product is neither flammable nor explosive.
 Where drums of this product are involved in a fire, regular foam, water or carbon dioxide/dry chemical may be used to cool them off until the fire is extinguished.



MATERIAL SAFETY DATA SHEET

HEPKLOR

INTERNATIONAL STANDARD MATERIAL SAFETY DATA SHEET FOR CHEMICAL PRODUCTS WHICH CONFORMS TO ISO 11014-1 1994

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION

Name: HEPKLOR Code: 0265 / GHS MSDS ref.: 65/010
 In emergency contact: Heat Exchange Products Tel +264 61 230027 or +264 812128825
 Head Office: 2-3 Brahman Street Northern Industrial, Windhoek, Namibia

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Preparation Liquid/Solid: Liquid Common Name: Sodium Hypochlorite
 Synonyms:

HAZARDOUS COMPONENTS

CAS. No.	COMPONENT	RANGE % CONTENT
7681-52-9	Sodium Hypochlorite	12.5%min

SECTION 3. HAZARDS IDENTIFICATION

Listing as per SABS 0265: 1999

KEY

Inhalation	:	1 – Slight risk	GHS: Cat. 1 - Danger	4 : Very toxic.
Skin	:	1 – Slight risk	GHS: Cat. 1 - Danger	3 : Toxic.
Ingestion	:	3 – Toxic	GHS: Cat. 3 - Acute	2 : Harmful.
Environmental	:	3 – Toxic	GHS: Cat. 3 - Acute	1 : Slight risk.
				0 : Normal material.

SECTION 4. FIRST AID MEASURES

Inhalation : Move patient to fresh air. Administer oxygen if necessary. Obtain medical attention without delay.
Skin : Immediately wash affected area. If necessary obtain medical attention.
Eyes : Immediately flush with water. Seek medical attention.
Ingestion : Toxic. Will cause damage if ingested. **Obtain medical attention without delay.**

SECTION 5. FIRE FIGHTING MEASURES


This product is not explosive, but will accelerate a burn.

Where drums of this product are involved in a fire, regular foam, water or carbon dioxide/dry chemical may be used to cool them off until the fire is extinguished.
 Contain and collect water. Do not discharge large volumes to drains or sewers.

MATERIAL SAFETY DATA SHEET (MSDS)

AMMONIA

(Please ensure that this MSDS is received by the appropriate person)

DATE: September 2015		Version 3
Ref. No.: MS025		
1 PRODUCT AND COMPANY IDENTIFICATION		
Product Name	Ammonia	
Chemical Formula	NH ₃	
Trade name	Ammonia	
Colour coding	Silver body with a Red(A.11) circle below the valve, and a yellow band immediately below the red circle	
Valve	CGA240-3/8 inch – 18 NGT right hand female	
Company Identification	African Oxygen Limited 23 Webber Street Johannesburg, 2001 Tel. No: (011) 490-0400 Fax No: (011) 490-0508	
EMERGENCY NUMBER	0860111185 or (011) 873 4382 (24 hours)	
2 COMPOSITION/INFORMATION ON INGREDIENTS		
Chemical Name	Ammonia	
Chemical family	Corrosive, caustic, reactive gas	
Synonyms	Anhydrous ammonia, R717	
CAS No.	7664-41-7	
UN No.	1005	
ERG No.	125	
Hazchem	Warning Corrosive toxic gas	
3 HAZARDS IDENTIFICATION		
Main Hazards	Irritating or corrosive to exposed tissues. Inhalation of vapours may result in pulmonary oedema and chemical pneumonitis. Contact with liquid product may cause frostbite or freeze burns, in exposed tissues. All cylinders are portable gas containers and must be regarded as pressure vessels at all times.	
Adverse Health Effects.	Inhalation of high concentrations produces violent coughing due to the local action on the respiratory tract. If rapid escape is not possible, severe lung irritation, pulmonary oedema and death can result. Lower concentrations cause eye irritation, laryngitis and bronchitis.	
Biological Hazards.	Because of its alkaline properties, long-term exposure to flora can cause damage. Aquatic fauna can also be affected should the pH of their environment change due to long-term exposure to high concentrations of ammonia.	
Vapour Inhalation.	Ammonia acts principally on the upper respiratory tract, where it exerts an alkaline, caustic action. It produces respiratory reflexes such as coughing and arrest of respiration. It affects the conjunctiva and cornea immediately. Inhalation causes acute inflammation of the respiratory organs, coughing, oedema of the lungs, chronic bronchial catarrh, secretion of saliva and retention of urine.	
Eye Contact	Exposure to high gas concentrations may cause temporary blindness and severe eye damage. Direct contact of the eyes with liquid anhydrous ammonia will produce serious eye burns.	
Skin Contact	Liquid anhydrous ammonia produces skin burns on contact.	
Ingestion	Swallowing of the liquid results in severe corrosive action of the mouth, throat, and stomach.	
Labelling Elements:	Hazard Pictograms	
		
Signal Word:	Danger	
Hazard Statements:	H221: Flammable gas H331: Toxic if inhaled H314: Causes severe skin burns and eye damage H400: Very toxic to aquatic life	
Precautionary Statements:	<u>(SEE FIRST AID MEASURES SECTION FOR TREATMENTS)</u> P280: Do not breathe gas/vapours P282: Do not get in eyes, on skin, or on clothing P284: Wash hands thoroughly after handling P271: Use only outdoors or in a well ventilated area P273: Avoid release to the environment P391: Collect spillage P284: Wear respiratory protection P304+P340: IF INHALED: remove to fresh air and keep at rest in a position comfortable for breathing P310: Immediately call a POISON CENTRE or doctor/physician P320: Specific treatment is urgent (see first aid measures section) P301+P330+P331: IF SWALLOWED: Rinse mouth. Do not induce vomiting P303+P361+P353: IF ON SKIN (or hair): Immediately remove or take off all contaminated clothing. Immediately rinse skin with water/shower P363: Wash contaminated clothing before re-use. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P401: Store in accordance with national regulations P403+233: Store in a well ventilated place and keep container tightly closed P405: Store locked up P501: Do not dispose contents/container to storm water drains, treat as hazardous waste.	



MATERIAL SAFETY DATA SHEET

ULTRAFLOC 3500

PAGE 1 OF 8
 MSDS 030/R4
 2012-02-23

Reg. No. 2001/019171/07

NCP CHLORCHEM (Pty) Ltd
 Cnr Allandale Road & Chloor Road, Chloorkop
 P O Box 150, KEMPTON PARK 1620
 SOUTH AFRICA

EMERGENCY TELEPHONE No.: +27 11 976 2115
 TELEPHONE No.: +27 11 921 3111
 FAX No.: +27 11 976 3305

1. PRODUCT IDENTIFICATION

TRADE NAME	U3500
ACTIVE INGREDIENT	ACH, Polyamine (U5100) and blue dye (Blue Colour 2021)
CHEMICAL NAME	Mixture of ACH, Polyamine (U5100)
SYNONYMS	None
CHEMICAL FAMILY	Cationic Polymer
CHEMICAL FORMULA	Mixture
CHEMICAL ABSTRACTS No.	12042-91-0 (ACH), polyamine (42751-79-1)
UN No.	3264 (ACH)
NIOSH No.	Not applicable
HAZCHEM CODE	Not applicable

2. COMPOSITION

HAZARDOUS COMPONENTS ACH and Polyamine (U5100)

EEC CLASSIFICATION Not applicable

RISK PHRASES

R34: Causes burns.
 R36 Irritating to eyes.
 R37 Irritating to respiratory system.
 R38 Irritating to skin.

SAFETY PHRASES

S7/8: Keep container tightly closed and dry.
 S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
 S28 (After contact with skin, wash immediately with plenty of water).
 S37 Wear suitable gloves
 S38 In case of insufficient ventilation wear suitable respiratory equipment
 S45 In case of accident or if you feel unwell, seek medical advice
 Immediately show label where possible

3. HAZARD IDENTIFICATION

MAIN HAZARDS

Irritating to eyes, skin and respiratory system.

NFPA (704) HAZARD RATING

Fire: 0 Material that will not burn

Health: 1 Material, which on exposure would cause irritation but only minor residual injury even if no treatment is given.

APPENDIX 2: EMBWINDA SAFETY, HEALTH & ENVIRONMENTAL POLICY

SAFETY, HEALTH & ENVIRONMENTAL POLICY

The management of the Embwinda Fishing (PTY) LTD will strive to operate in such a responsible manner to protect the Health and Safety of our employees, visitors and Service providers and the Environment in which we operate. Management believes that the responsibility of their employees towards Safety, Health and Environment is as important to prevent harm to themselves and to others and is essential for the continuing success of our operations.

Management will therefore: -

- Set and comply with standards & requirements of relevant codes of practices, where appropriate and exceed applicable National legal local and abroad requirements.
- Continuously improve and review their standards in light of changes in technology, best practices and trends in legislation.
- Identify and assess Safety, Health and Environmental risks in new and existing operations, and continually strive to reduce these risks.
- Ensure that all employees are made conversant with the hazards associated with their work and the precautionary measures that must be taken.
- Provide training to all employees to enable and encourage them to perform their jobs efficiently with special emphasis on their commitment to their Safety-Health-Environment and to participate in all elements of the SHE management system
- Encourage employees to actively participate in the prevention of accidents/incidents and also to report potential incidents in an ongoing process. Report all unsafe conditions or unsafe acts immediately
- It will be the duty and responsibility of every employee to take appropriate care of their own Health and Safety and those who may be affected
- Provide necessary facilities, resources and training to promote the Safety and Health of employees at workplace and the environment in which they operate.
- Compliance audits and inspections on policies and procedures will be conducted on a continuous basis in order to identify non-conformances and to implement corrective and preventative measures.
- Safety and Health considerations will take precedence over expedient operational practices.
- Annually establish and review objectives and targets to ensure continual progress towards our vision

- Commit to prevention of pollution and strive to ensure continuous improvement of its SHE performances
- Improve our efficiency with regards to power usage;
- Ensure that all hazardous chemicals that are handled and stored are done so in a responsible manner;
- Ensure that all products, waste and equipment leaving the plant is transported, disposed of and/or decontaminated appropriately by an approved waste disposal service provider;
- Subject all employees to medical surveillance and biological monitoring, where required, to ensure their health and safety in the workplace.
- Pro-actively identify and re-act on concerns from customers and their products;

J. L. Reyero

Managing Director – Embwinda Fishing (PTY) Ltd

Date: 08 July 2020

APPENDIX 3: ACCREDITATION AND CERTIFICATION OF FISH PROCESSING AND PACKING BY EMBWINDA FISHING



CERTIFICATE

Herewith the certification body ProCert AG, being an accredited certification body for IFS certification and having signed an agreement with the IFS owner, confirms that the processing activities of the organisation meet the requirements set out in the IFS Food and other associated normative documents.

Embwinda Fishing (Pty) Ltd
 Ben Amathila Avenue
 25250 Walvis Bay (Namibia)



Standard
IFS Food
 Version 6.1, November 2017

Scope of the audit:
Processing and packing of frozen hake (headed, gutted and tailed), hake fillets, hake portions, hake roes, hake cocochas, hake mince and monk and kingklip (headed, gutted and tailed), other whole-round fish as by-catch and squid in corrugated cartons



COID	68447
Level	Foundation level
With a score of	88.17 %
Product scopes	2 Fish and fish products
Technology scopes	D, F
Type of audit	announced
Audit date	8 - 11 July 2019
Time frame for next audit (or unannounced audit)	16 May 2020 - 25 July 2020
Date of issue of certificate	30 August 2019
Validity of the certificate	4 September 2020 *



Christian Schwob

Christian Schwob
 Director Certification

Gustav Gallasz

Gustav Gallasz
 Member of certification commission

* Subject to suspension or withdrawal of certification. Only ProCert's public register (www.procert.ch, Certificates) and the IFS Directory (access via QR code) attests validity of this certificate.

CHAIN OF CUSTODY CERTIFICATE

This is to certify that:

Embwinda Fishing (Pty) Ltd

Ben Amathila Avenue
Walvisbay
13013
Namibia
Contact: Josia Halwoodi
Tel: +264 64218315
Fax: +264 64218308
E-mail: jhalwoodi@cadil.u.com

conforms to the requirements of:

Marine Stewardship Council (MSC) Chain of Custody Default Standard (v5.0)

The buyer of fish or fish products from this organisation may, with approval from MSC, apply the MSC trademark to fish or fish products within their own scope of MSC CoC certification.

The MSC website www.msc.org is the authoritative source of information regarding certificate scope and validity

MSC CoC Certificate No.:

MSC-C-56391

Valid from:

19 October 2020

Valid until:

03 April 2022




Authorised Signature
Calin Moldovean
President, Food Services

Intertek Certification Limited
10A Victory Park, Victory Road
Derby DE24 8ZF, UK

C281020201429



Intertek Certification limited is an ASI assurance services international under schedule of accreditation no. ACC-MSC-010.

In the issuance of this certificate, Intertek assumes no liability to any party other than to the Client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at certificate.validation@intertek.com or by scanning the code to the right with a smartphone. The certificate remains the property of Intertek, to whom it must be returned upon request

3-2a ICL - Certificate Template - MSC CoC Single Site - v2.1 rev 03 (01.07.2020) = EN-A4





2021

CERTIFICATE OF REGISTRATION

This certifies that:

**Embwinda Fishing (Pty) Ltd
Ben Amathila Avenue
Walvis Bay
Namibia**

is registered with the U.S. Food and Drug Administration pursuant to the Federal Food Drug and Cosmetic Act, as amended by the Bioterrorism Act of 2002 and the FDA Food Safety Modernization Act, such registration having been verified as currently effective on the date hereof by Registrar Corp:

U.S. FDA Registration No.: **12031988574**
U.S. Agent for FDA **Registrar Corp**
Communications: 144 Research Drive, Hampton, Virginia, 23666, USA
Telephone: +1-757-224-0177 • Fax: +1-757-224-0179

This certificate affirms that the above stated facility is registered with the U.S. Food and Drug Administration pursuant to the Federal Food Drug and Cosmetic Act, as amended by the Bioterrorism Act of 2002 and the FDA Food Safety Modernization Act, such registration having been verified as effective by Registrar Corp as of the date hereof, and Registrar Corp will confirm that such registration remains effective upon request and presentation of this certificate until December 31, 2021, unless such registration has been terminated after issuance of this certificate. Registrar Corp makes no other representations or warranties, nor does this certificate make any representations or warranties to any person or entity other than the named certificate holder, for whose sole benefit it is issued. Registrar Corp assumes no liability to any person or entity in connection with the foregoing. The U.S. Food and Drug Administration does not issue a certificate of registration, nor does the U.S. Food and Drug Administration recognize a certificate of registration. Registrar Corp is not affiliated with the U.S. Food and Drug Administration.


Registrar Corp
144 Research Drive, Hampton, Virginia, 23666, USA
Telephone: +1-757-224-0177 • Fax: +1-757-224-0179
info@registrarcorp.com • www.registrarcorp.com


David Lemar
Executive Director
Registrar Corp
Dated: November 5, 2020
© Copyright 2003-2020 Registrar Corp



Issue Number: 9D/2020A

INSPECTION CERTIFICATE


Name of Establishment: Embwinda Fishing
Establishment number: 9D
Physical address: Ben Amadhila Avenue, Walvis Bay, Namibia
Postal address: P.O Box 1734, Walvis Bay, Namibia

This is to certify that the Establishment satisfactorily addressed the Food Safety and HACCP requirements in terms of:

Regulations EC 852/2004 and EC 853/2004 and various relevant EC Directives;
FDA Regulation 21 CFR 123;
Relevant National Compulsory Standards Specifications

The Establishment assured the NSI that any non-conformances pointed out to Management during an inspection shall be addressed within a specified period. Failure to comply with this requirement or with any of the requirements in terms of the relevant Regulations may result in the cancellation of this certificate.

Date issued: 2020/09/18
Expiry date of Certificate: 2021/09/18
Inspector's Name(s): S. Amboto, M. Ndeunyema


Concepcion Wasserfall (Chie)
Chief Executive Officer

This document does not imply NSI approval of any commodities manufactured.

"Creating Peace of Mind"

Walvis Bay		Municipality
<u>REGISTRATION CERTIFICATE NO. 2014/0709</u>		
EMBWIINDA FISHING (PTY) LTD		
is registered to carry on business as a		
FISHING FACTORY		
in accordance with the Local Authority Act 2000 (Act 29 of 2000) and the General Health Regulations 1969 (GN121 of 1969) Under the following conditions		
Name of Owner:	EMBWIINDA FISHING (PTY) LTD	
Name of Manager:	JOSE LUIS REYERO	
Business Address:	P O BOX 1734, WALVIS BAY, NAMIBIA, 21001	
Street Address:	CADILU PREMISES, BEN AMATHILA AVENUE, WALVIS BAY	
Erf No:	W3693	
Receipt No.:	Date of Registration:	Expiry Date:
40001078	2019/09/02	2020/09/01
		
<p><small>Please note: This certificate does not exempt the holder of obtaining a permit or any other document which may be required by law imposed by other ministries. Any alteration of this certificate without the approval of the Registration Authority constitutes a criminal offence.</small></p>		
<p><small>ENVIRO MARINE CONSULTANTS cc/2007/3842 PRIVATE DAY 047 781 064 2013208</small></p>		

South African National Halaal Authority

الهيئة الوطنية لتوثيق الحلال بجنوب أفريقيا



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E-mail: sanha-gp@sanha.org.za
www.sanha.org.za

2nd Floor
63 Dolly Rathebe Road
Fordsburg 2033
Johannesburg, South Africa

P.O. Box 2092, Durban 4000, KwaZulu-Natal, South Africa
(Registered Non-Profit Organisation 057-933 NPO)

Issue Date: 23rd March 2020

Expiry Date: 30th April 2021

ADD-F08-LOC-General Extended ED3 (2) – Embwinda Fishing : ad-loc/AM-mys-ff/0555/03.2020

T O W H O M I T M A Y C O N C E R N

This serves to confirm that the products listed on page 2 hereafter of


Embwinda Fishing (Pty) Ltd
Ben Amathila Avenue, Walvis Bay
Namibia

have been certified Halaal by our organisation.

Official SANHA auditors visit the manufacturing premises on a regular basis and we are pleased to state that the listed products are free of non-Halaal ingredients.

Thanking you,
for South African National Halaal Authority


M.S. Navilini (Moulana)
Theological Director


M.Y. Saed (Mufti)
Theological Representative

NB:

1. This document is issued for trade confirmation purposes only and is NOT valid as a display certificate.
2. This confirmation certificate is not transferable and cannot be used for display by restaurants, value added plants, third party vendors etc. or to make any Halaal claim for their premises.
3. This certificate remains the property of SANHA and must be returned upon demand.
4. Misuse of this document constitutes fraud.

Page 1 of 2



APPENDIX 4: MASTER DOCUMENTATION LIST OF IFS POLICIES, PROCEDURES AND FORMS BY EMBWINDA FISHING

IFS2-01-2 MASTER DOCUMENT LIST

Doc #	Document Title	Rev Num	Current Rev Date	Responsibility	Document Location
	CLAUSE 1:				
IFS1-01	Management Responsibility	01	30/09/20	Man Director; Fin Manager; Food Safety Team Leader	Quality Assurance Office
IFS1-02	Corporate Structure	01	30/09/20	Man Director; Fin Manager; Food Safety Team Leader	Quality Assurance Office
IFS1-03	Statutory and Legislative Requirements	01	30/09/20	Food Safety Team	Quality Assurance Office
IFS1-04	Internal and External Communication	01	30/09/20	Man Director; Fin Manager; Food Safety Team Leader	Quality Assurance Office
IFS1-05	Customer Focus	01	30/09/20	Man Director; Fin Manager; Food Safety Team Leader	Quality Assurance Office
	CLAUSE 2:				

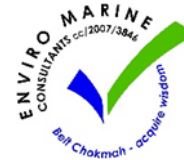
IFS2-01	Document Control	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS2-02	Record Control	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS2-03	HACCP Plan Preparation	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS2-04	Hazard Analysis and Critical Control Point Determination	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS2-05	HACCP Plan Management	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS2-06	HACCP Plan Review	01	15/09/20	Food Safety Team	Quality Assurance Office
	CLAUSE 3:				
IFS3-01	Personal Hygiene Practices	01	30/08/20	Food Safety Team	Quality Assurance Office
IFS3-02	Competence, Awareness and Training	01	01/06/20	Food Safety Team	Quality Assurance Office
IFS3-03	Staff Facilities	01	15/09/20	Food Safety Team	Quality Assurance Office

	CLAUSE 4:					
IFS4-01	Specifications, Formulas & Agreements	01	30/10/19	Food Safety Team	Quality Assurance Office	
IFS4-02	Product Development	01	15/09/20	Food Safety Team	Quality Assurance Office	
IFS4-03	Control of Suppliers	01	15/09/20	Food Safety Team	Quality Assurance Office	
IFS4-04	Packaging Material and Labelling	01	30/10/19	Food Safety Team	Quality Assurance Office	
IFS4-05	Premises, Construction and Layout	01	15/09/20	Food Safety Team	Quality Assurance Office	
IFS4-06	Utilities	01	30/09/20	Food Safety Team	Quality Assurance Office	
IFS4-07	Cleaning and Sanitation	01	15/09/20	Food Safety Team	Quality Assurance Office	
IFS4-08	Waste and Waste Disposal	01	15/09/20	Food Safety Team	Quality Assurance Office	
IFS4-09	Physical Contamination Control	01	30/10/19	Food Safety Team	Quality Assurance Office	

IFS4-10	Pest Control	01	30/10/19	Food Safety Team	Quality Assurance Office
IFS4-11	Receiving and Storage	01	15/06/20	Food Safety Team	Quality Assurance Office
IFS4-12	Transport	01	15/06/20	Food Safety Team	Quality Assurance Office
IFS4-13	Equipment Suitability and Maintenance	01	15/09/20	Food Safety Team. Maintenance Team	Quality Assurance Office
IFS4-14	Traceability	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS4-15	GMO and Allergen Control	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS4-16	Food Fraud Management	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS4-17	Rework	01	15/09/20	Food Safety Team	Quality Assurance Office
IFS4-18	Colour code	01	15/09/20	Food Safety Team	Quality Assurance Office
CLAUSE 5:					

IFS5-01	Internal Audit	01	20/01/20	Food Safety Team	Quality Assurance Office
IFS5-02	Site Factory Inspections	01	30/09/20	Food Safety Team	Quality Assurance Office
IFS5-03	Process Validation and Control	01	01/07/20	Food Safety Team	Quality Assurance Office
IFS5-04	Control of Monitoring and Measuring	01	21/01/20	Food Safety Team	Quality Assurance Office
IFS5-05	Control of Quantity	01	15/06/20	Food Safety Team	Quality Assurance Office
IFS5-06	Testing and Quarantine	01	30/10/19	Food Safety Team	Quality Assurance Office
IFS5-07	Product Recall	01	30/09/20	Food Safety Team	Quality Assurance Office
IFS5-08	Complaints Procedure	01	30/09/20	Food Safety Team	Quality Assurance Office
IFS5-09	Control of Non-Conformances	01	30/09/20	Food Safety Team	Quality Assurance Office

IFS5-10	Corrective Action	01	30/09/20	Food Safety Team	Quality Assurance Office
IFS5-11	Management of Incidences	01	15/09/20	Food Safety Team	Quality Assurance Office
CLAUSE 6:					
IFS6-01	Food Defence and Security	01	30/08/20	Food Safety Team	Quality Assurance Office
IFS6-02	External Inspections Management	01	30/08/20	Food Safety Team	Quality Assurance Office



APPENDIX 5: EFFLUENT STANDARDS FOR THE WTER ACT (ACT NO. 54 OF 1956) AND WATER RESOURCE MANAGEMENT ACT (ACT NO. 11 OF 2013)

EFFLUENT STANDARDS FOR THE TWO ACTS

DETERMINANTS	Water Act, (Act 54 of 1956)		Water Act, (Act 11 of 2013)	
	General Standard	Special Standard	General Standard	Special Standard
Physical Requirements				
Colour mg/l, odor, taste	No substance that will produce colour, odor, taste		< 15, no offensive smell	< 10, no offensive smell
pH	5.5 - 9.5	5.5 - 7.5	6.5 - 9.5	6.5 - 9.5
Temperature °C	≤35	≤25	<10°C higher than recipient water body	
Conductivity mS/m @ 25°C	NS		<75 mS/m above the intake potable water quality	
Turbidity NTU	NS		<12	<5
Total Dissolved Solids (TDS) mg/l	<500 mg/l above the intake potable water quality	≤15% mg/l more than the inlet water	<500 mg/l above the intake potable water quality	
Total Suspended Solids (TSS) mg/l	25	10	<100	<40
Dissolved Oxygen (DO) % saturation	at least 75% saturation		>75% saturation	
Organic Requirements				
Biological Oxygen Demand (BOD) mg/l	NS		<30	<10
Chemical Oxygen Demand (COD) mg/l	75	30	<100	<55
Oxygen Absorbed mg/l	10	5	NS	
Soap, oil or grease mg/l	2.5	Nil	< 3	< 0.2
Fat, oil & grease (FOG) individual mg/l			< 3.0	< 1.0
Phenolic compounds (as Phenol) mg/l	0.1	0.01	0.1	0.01
Inorganic Macro Determinants				
Ammonia (NH ₄ as N) mg/l	10	0.1	<10	<1
Nitrate (NO ₃ as N) mg/l	NS	1.5	<20	<15
Total Kjeldahl Nitrogen (TKN as N) mg/l	NS		<33	<5.0
Chloride (as Cl) mg/l	NS	<70 mg/l above the intake potable water quality	<70 mg/l above the intake potable water quality	<40 mg/l above the intake potable water quality
Sodium (as Na) mg/l	< 50 mg/l of inlet water		<90 mg/l above the intake potable water quality	<50 mg/l above the intake potable water quality
Sulphate (as SO ₄) mg/l	NS	<10 mg/l above the intake potable water quality	<40 mg/l above the intake potable water quality	<20 mg/l above the intake potable water quality
Ortho-Phosphate (PO ₄ as P) mg/l	NS	1.0	<15	<1.0
Total Phosphates (as P) mg/l	NS	2.0	NS	NS
Fluoride mg/l	1.0	1.0	2.0	1.0
Sulphides (as S)- mg/l	1.0	0.05	< 0.5	< 0.05
Cyanide and related compounds (as CN)- mg/l	0.5	0.5	free < 100 µg/l	free < 30 µg/l
			recoverable < 200 µg/l	recoverable < 70 µg/l
Inorganic Micro Determinants				

Arsenic (as As) mg/ℓ	0.5	0.1	0.15	0.05
Boron (as B) mg/ℓ	1.0	0.5	1.0	0.5
Chromium, hexavalent (as Cr) mg/ℓ	0.05	NS	0.05	0.01
Chromium, Total (as Cr) mg/ℓ	0.5	0.05	1.0	0.05
Copper (as Cu) mg/ℓ	1.0	0.02	2.0	0.5
Lead (as Pb) mg/ℓ	1.0	0.1	0.1	0.01
Zinc mg/ℓ	5.0	0.3	5	1
Iron (as Fe) mg/ℓ	NS	0.3	1	0.2
Manganese (as Mn) mg/ℓ	NS	0.1	0.4	0.1
Microbiological Requirements				
Total coliforms counts/100 ml	0/100	0/100	0/100*	0/100*
E. Coli counts/100 ml	0/100	0/100	0/100*	0/100*

NS = not specified

*** MICROBIOLOGY**

Further treatment of the effluent are dependent on:

1. the water quality of the recipient water body if any
2. the distance from any point of potable water abstraction
3. an acceptable maximum contaminant level downstream of the point of discharge
4. the exposure to human and animal consumption downstream of the point of discharge
5. any water reuse option that may be implemented.