

S.I. 53 of 2023

ENVIRONMENT PROTECTION ACT

(Act 18 of 2016)

**ENVIRONMENT PROTECTION (EFFLUENT STANDARDS)
REGULATIONS, 2023**

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S.I. 53 of 2023**ENVIRONMENT PROTECTION ACT***(Act 18 of 2016)***Environment Protection (Effluent Standards) Regulations, 2023**

In exercise of the powers conferred by sections 5, 14 (b) and 80 (1) (d) of the Environment Protection Act, 2016, the minister responsible for environment, in consultation with the Ministry responsible for health, makes the following Regulations —

PART 1 - PRELIMINARY**Citation**

1. These Regulations may be cited as the Environment Protection (Effluent Standards) Regulations, 2023.

Interpretation

2. In these Regulations, unless the context otherwise requires —

“Act” means the Environment Protection Act, 2016;

“best available technology” means application of methods, principles and technological innovation, which complies with established standards of performance;

“cleaner production techniques” means practices and technologies used to minimise waste and effluent generation, optimise resource utilisation and reduce environmental pollution and impacts associated with industrial processes and activities; and

“environmental laboratory” means an environmental laboratory established or recognized under section 64 of the Act.

PART 2 - LIMITATIONS AND CONTROL OF EFFLUENT

General obligation to prevent and mitigate pollution

3. A person whose activities are likely to produce effluent shall put in place a management system, in order to prevent, control and mitigate pollution in accordance with the Act, these Regulations and any other written law, including by —

- (a) employing the best available technology and cleaner production techniques; and
- (b) installing effluent treatment equipment and facilities for effluent emanating from the activities of the applicant.

Environmental standards for effluent

4.(1) The standards for effluent on discharge into any watercourse or on land are prescribed in these Regulations.

(2) Schedule 1 sets out the categories of pollutant activities and their parameters.

(3) A person who intends to discharge any effluent from any activity shall comply with the effluent quality standards set out in Schedule 2.

Application for variance of environmental standards for effluent

5. The Minister may, in special circumstances and in consultation with any relevant public authority, vary any standards for effluent and impose conditions on the applicant.

Effluent to be treated

6. Effluent shall be treated in accordance with the standards set out in Schedule 2, before it is discharged into any watercourse or in the territorial waters or on land, unless in exceptional circumstances an exemption is specifically granted by the Minister.

Effluent to be free of certain substances

7.(1) Subject to these Regulations or any other written law, effluent discharged into any watercourse or in the territorial waters or on land shall not exceed the maximum permissible level set out in Schedule 2 and shall not contain any of the following —

- (a) hazardous substance;
- (b) hazardous waste;
- (c) any pesticide, fungicide, herbicide, insecticide, rodenticide or fumigant; or
- (d) such other substances that the Minister specify by notice published in the Gazette.

(2) The Minister may, in special circumstances and in consultation with any relevant public authority, authorise an applicant to discharge effluent containing the substances specified in subregulation (1) and impose conditions on the applicant.

Code of Practice

8.(1) The Minister may issue or approve, and may modify, a Code of Practice set out in Schedule 3, providing guidance and directions on any of the following matters —

- (a) the monitoring and management of effluent discharge;
- (b) water pollution control;
- (c) wastewater overflow management; and
- (d) any such other matters that the Minister considers necessary for the protection of the environment.

(2) The Minister shall publish the Code of Practice in the Gazette.

(3) A copy of the Code of Practice issued or approved under subregulation (1) —

- (a) is obtainable at the Ministry on payment of a fee during working hours; and
- (b) is available on the internet website managed by the Ministry.

(4) The Minister may revoke an authorisation to discharge effluent where the person who was granted the authorisation fails to comply with the Code of Practice.

PART 3 - AUTHORISATION TO DISCHARGE EFFLUENT

Application for authorisation to discharge effluent

9.(1) A person who intends to discharge effluent shall apply to the Minister for an authorisation to discharge the effluent into any watercourse or in the territorial waters or on land.

(2) An application under subregulation (1) shall be in the form prescribed in the Environment Protection (Miscellaneous) Regulations, 2019 (S.I. 7 of 2019) and accompanied by the prescribed fee.

Processing of application for an authorisation to discharge effluent

10.(1) The Minister shall, in processing an application under regulation 9, consider any comments and recommendations received from any public authority.

(2) The Minister may in processing an application under regulation 9, direct the Ministry to conduct inspections that are necessary to enable the Minister to make an informed decision regarding —

- (a) the availability of the best available technology and cleaner production techniques to manage the effluent for which the application is made;

- (b) the ability of the applicant to install and utilise effluent treatment equipment and facilities for effluent emanating from the activities of the applicant;
- (c) measures for the protection of human health and the environment; and
- (d) any other specific measure that may be deemed necessary.

(3) In addition to the provisions under the Environment Protection (Miscellaneous) Regulations, 2019, the Minister shall, before issuing an authorisation for a person to discharge effluent under regulation 11, direct an authorised officer to —

- (a) verify that the applicant has adequate technical capacity to manage the effluent;
- (b) consider the potential impacts of the effluent discharge on human health or the environment;
- (c) verify that the applicant meets any other requirements under the Act or any other applicable law; and
- (d) take any other measures as are necessary to ensure compliance with the relevant requirements of the Act or any other applicable law.

Issuance of authorisation

11. The Minister may, after being satisfied that the applicant meets the requirement of this Part and any other written law, grant an authorisation to a person to discharge effluent into any watercourse or in the territorial waters or on land in accordance with regulation 8 of the Environment Protection (Miscellaneous) Regulations, 2019.

Conditions in the grant of authorisation

12. The Minister may, in granting an authorisation under regulation 11, impose conditions, including requirements related to —

- (a) the activity or facility for which the permit is issued;
- (b) the maximum volume of effluent that may be discharged daily;
- (c) the maximum rate at which effluent may be discharged at any given time;
- (d) the installation of anti-pollution equipment for the treatment of effluent emanating from its origin;
- (e) the method of sampling and location of sampling points of the effluent;
- (f) the discharge point;
- (g) the frequency of analysis to be conducted in respect of the effluent;
- (h) the standards of discharge set out in Schedule 2 or as varied in accordance with regulation 5; and
- (i) any other conditions as the Minister may deem necessary.

Suspension, revocation or modification of authorisation to discharge effluent

13.(1) The Minister may suspend, revoke or modify any grant of an authorisation to a person to discharge effluent issued pursuant to regulation 11 where —

- (a) the information, particulars or data given by the applicant in relation to regulation 5, 7 or 9 or during an inspection of the place or premises by an authorised officer were false, substantially incorrect or intended to mislead;
- (b) it is necessary to protect human health or to prevent harm or further harm to the environment, due to a situation that

was not reasonably foreseen or anticipated during the grant of the authorisation;

- (c) there is non-compliance with the Act or any relevant law; or
- (d) any other considerations that may warrant the suspension, revocation or modification of the grant of authorization to discharge effluent.

(2) Where the Minister intends to suspend, revoke or modify the grant of authorisation to discharge effluent, the Minister shall —

- (a) notify the person who was granted authorisation to discharge effluent the intention of the Minister before the decision is taken; and
- (b) inform the person who was granted authorisation to discharge effluent of that person's right to show cause why the grant of authorisation to discharge effluent should not be suspended, revoked or modified.

(3) The person who was granted authorisation to discharge effluent may give a written response to the Minister, within 48 hours from the receipt of the notice issued under subregulation (2), stating reasons why the grant of authorisation to discharge effluent should not be suspended, revoked or modified.

(4) The Minister may, after the expiration of the period specified under subregulation (3), suspend or revoke the effluent discharge permit where —

- (a) the Minister is not satisfied with the reasons given by the person who was granted authorisation to discharge effluent; or
- (b) the Minister has not received a response from the person who was granted authorisation to discharge effluent.

(5) Notwithstanding subregulation (2), the Minister may, depending on the gravity of the matter, suspend, revoke or modify the grant of authorisation to discharge effluent without notice and require the person who was granted authorisation to discharge effluent to cease forthwith all activities or operations at the place or premises that produce effluent.

(6) Where the grant of authorisation to discharge effluent is suspended under subregulation (4) or (5), the person who was granted authorisation to discharge effluent shall stop any further operations that produce effluent and undertake necessary remedial measures in a manner determined by the Minister.

(7) Where an effluent discharge permit is suspended and the person who was granted authorisation to discharge effluent has undertaken remedial measures under subsection (6) to the satisfaction of the Minister, that person may apply to the Minister for reconsideration to permit the person to discharge effluent.

PART 4

NEW SOURCES OF EFFLUENT DISCHARGE

Prohibition against new and altered sources of effluent discharge

14. Notwithstanding any other written law, no person shall without prior written authorisation of the Minister —

- (a) carry out any work at any place or on any premises that may result in a new origin or source of effluent discharge; or
- (b) cause a material change in the quantity or quality of the effluent discharge from an existing origin.

Requirement and approval of application

15.(1) An application for an authorisation under regulation 15 shall be submitted to the Minister in such form as the Minister may determine and accompanied by a fee of SCR500.

(2) On receipt of an application under subregulation (1), the Minister, may, after consulting the relevant public authorities, grant an authorisation, subject to conditions or unconditionally.

PART 5 MISCELLANEOUS

Point of discharge of effluent

16.(1) The point or points of discharge of effluent shall be approved by the Minister.

(2) The position and design of the outlet at the point or points of discharge of effluent as determined in sub-regulation (1) shall not be altered or changed without prior Minister.

Sampling points

17. A person who has authorisation to discharges effluent into any watercourse or in the territorial waters or on land shall, in connection with such discharge, install such sampling test point or points inspection chambers, flow meters, and recording and other apparatus of the best available technology on the approval of the Minister.

Monitoring and inspection by authorised officers

18.(1) An authorised officer shall conduct inspections and monitoring of the place or premises generating or discharging effluent with the view —

- (a) to assess compliance with the standard for effluent from an activity set out in Schedule 2;
- (b) to assess compliance with any conditions imposed by the Minister on a person granted an authorisation to discharge effluent;
- (c) to ascertain that appropriate measures are in place for avoiding and minimising pollution of the environment or harm to human health;

- (d) to verify the availability and functionality of any equipment, apparatus or thing that is a pre-condition for the discharge of effluent pursuant to these Regulations; and
- (e) to undertake any other interventions as may be deemed necessary for the protection of the environment.

(2) A person whose activities or operations at a place or premises produce effluent shall permit an authorised officer to take samples of effluent pursuant to section 63 of the Act and regulations 5, 6 and 7 of the Environment Protection (Miscellaneous) Regulations, 2019.

(3) The occupier or owner of any premises shall provide any authorized officer or public officer accompanying the authorised officer every reasonable assistance that the authorised officer may need to inspect or monitor the premises for the purposes of subregulation (1) as stipulated under section 61 of the Act.

Self-monitoring

19.(1) Where the Minister imposes a condition under regulation 12(g) on the person to discharge effluent, that person shall submit samples of that effluent to an environment laboratory for an analysis to ascertain whether the effluent meets the standards set out in Schedule 2 and the results of the analysis shall be submitted to the Ministry.

(2) The person granted an authorisation to discharge effluent shall pay the environmental laboratory for an analysis conducted under subregulation (1).

(3) Where a person who is granted an authorisation to discharge effluent does not comply with the conditions under regulation 12(g), an authorised officer shall take the sample in accordance with regulation 18(2) and the person who is granted an authorisation to discharge effluent shall pay a fixed administrative fee of SCR2,500 to the Ministry and pay the laboratory for an analysis conducted under that provision.

(4) Nothing in subregulation (3) shall be construed as preventing the Minister from suspending or revoking an authorisation to discharge effluent on the grounds that the person issued the authorisation breached the conditions imposed under regulation 12(g).

Register of effluent points of discharge

20.(1) The Ministry may establish and maintain a register of effluent points of discharge.

(2) The register shall contain —

- (a) the name and address of the person granted authorisation to discharge effluent;
- (b) the proposed site and activity; and
- (c) such other information that the Minister may determine.

(3) The Ministry shall cause the register to be updated periodically.

(4) The register may be open to the public for inspection.

General penalty

21. A person who discharges effluent into any watercourse or in the territorial waters or on land without authorisation from the Minister commits an offence under section 68(2) of the Act.

Regulations to be read with other laws

22. These Regulations shall be read together with any other written law relating to effluent, and the provisions of these Regulations shall be in addition to, and not in derogation of, such other written laws.

PART 6

REPEAL, SAVINGS AND TRANSITIONAL PROVISIONS

Repeal and savings

23.(1) The Environment Protection (Standards) Regulations, 1995 (S.I. 83 of 1995) is repealed.

(2) Any decision, approval or permit given under any law that was premised on the repealed Environment Protection (Standards) Regulations, and which is in force immediately before the commencement of these Regulations shall have effect from the commencement of these Regulations as if made or granted, under these Regulations .

Transitional provisions

24.(1) A person who was granted an authorisation to discharge effluent before the commencement of these Regulations shall take steps to —

- (a) comply with the effluent parameters for the pollutant activity as set out in Schedule 2; and
- (b) comply with Regulations 3, 4, 6, and 8 no later than 1st July, 2024.

(2) A person who was granted an authorisation to discharge effluent before the commencement of these Regulations shall continue to meet the effluent quality standard in the Schedule to the Environment Protection (Standards) Regulations and shall take urgent steps to comply with the effluent parameters for the pollutant activities and the Code of Practice set out in Schedules 1, 2 and 3, no later than 1st July, 2024.

SCHEDULE 1*[Regulation 4(1)]***POLLUTANT ACTIVITY AND PARAMETERS**

Categories	Parameters
Dischargers 20 m³/d to 1,000 m³/d. This category includes residential, accommodation, restaurants, shops, and other non-industrial establishments.	Temperature, pH, BOD ₅ @20°C TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Free chlorine.
Dischargers > 1,000 m³/d. This category includes municipal discharge.	Temperature, pH, BOD ₅ @20°C, TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Free chlorine, Total Nitrogen and TKN.
Irrigation	Temperature, pH, BOD ₅ @20°C, TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Free chlorine. The effluent shall be treated and filtered before use for irrigation and only for use in landscaping. Use of treated effluent for food production or water features if there are any, shall be determined on a case-by-case basis.
Industrial	
Fisheries Industry	Temperature, pH, BOD ₅ @20°C, TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Total Nitrogen, TKN and Free chlorine.
Beverage Industry	Temperature, pH, COD, BOD ₅ @20°C, TSS, Sodium, Zinc, Detergents, Free chlorine.
Chemical Processing	Temperature, pH, BOD ₅ @20°C, TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Free chlorine Effluent Limits to be determined by the Ministry on a case-by-case basis.
Food processing	Temperature, pH, COD, BOD ₅ @20°C, TSS, Chloride, Total Nitrogen, Sodium, oil and grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Free chlorine.

Abattoir	Temperature, pH, BOD ₅ @20°C, TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, chloride, Total Nitrogen and Free chlorine
Medical Waste	Temperature, pH, BOD ₅ @20°C, TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Free Chlorine.
Breweries and distillery	Temperature, pH, COD, BOD ₅ @20°C, TSS, Selenium, Zinc, Oil and Grease, Detergent, Total Nitrogen, Copper, Arsenic, and Free chlorine.
Paint Manufacturing	Colour, temperature, pH, COD, BOD ₅ @20°C, TSS, Chloride, Sulphate, Sulphide, Aluminium, Cadmium, Total Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Zinc, Oil and Grease, Total Organic Halides and Free chlorine.
Mechanical Workshop	pH, COD, BOD ₅ @20°C, Oil and Grease, Total Chromium, Lead, Manganese, Zinc, Free chlorine, Arsenic, Mercury, Sulphate, Cadmium and Aluminium.
Printing Industry	Temperature, pH, BOD ₅ @20°C, TSS, COD, Oil and Grease, Total Coliforms, E. Coli., Intestinal Enterococci, Salmonella, Free chlorine, Lead and Arsenic. The effluent limits shall be determine on a case by case basis.
Pre-treatment for Discharge to the PUC Sewage System	As prescribed by PUC under the Public Utilities Act.

Note:

*Discharge into a Marine National Park shall meet the effluent standards as categorised in Schedule 1 but with a total Nitrogen limit of 30 mg/L.

* Discharge on land or in a water course shall meet the standards for its category and the Total Nitrogen limit (Nitrate as N, Nitrite as N and TKN) and Total Phosphorus limit specified in Schedule 2.

*TKN (Total Kjeldahl Nitrogen) combines the measurement of the organic nitrogen and the ammonia nitrogen concentrations into a single value.

*Total Nitrogen combines the measurement of the TKN, Nitrate as N and Nitrite as N.

SCHEDULE 2*[Regulation 4(2)]***GENERAL EFFLUENT QUALITY STANDARDS**

Parameters	Units	Maximum Permissible Limits
Temperature (at point of discharge)	C °	35
pH @25 C °	pH units	5.5- 8.5
Total Suspended solids	mg/L	30
BOD ₅ @20 C °	mg/L	30
COD	mg/L	90
Free Chlorine	mg/L	0.5
Chloride	mg/L	750
Total Nitrogen (N)	mg/L	40
Nitrite (N)	mg/L	1
TKN (N)	mg/L	30
Total Phosphorus (P)	mg/L	10
Oil and grease	mg/L	10
Total coliforms	Cfu/100ml	500
E Coli	Cfu/100ml	100
Intestinal Enterococci	Cfu/100ml	100
Salmonella		Absent
Sulphate	mg/L	750
Sulphide	mg/L	0.002
Chromium (total)	mg/L	0.05
Arsenic	mg/L	0.1
Beryllium	mg/L	0.1
Boron	mg/L	0.75
Mercury (total)	mg/L	0.005
Molybdenum	mg/L	0.01
Cadmium	mg/L	0.01
Cobalt	mg/L	0.05
Copper	mg/L	0.5
Iron	mg/L	2.0

Lead (total)	mg/L	0.05
Lithium	mg/L	2.5
Copper (total)	mg/L	0.5
Zinc (total)	mg/L	2
Nickel (total)	mg/L	0.1
Selenium	mg/L	0.02
Sodium	mg/L	200
Aluminium	mg/L	5
Manganese (total)	mg/L	0.2
Vanadium	mg/L	0.1
Total Pesticides	mg/L	0.025
Total organic halides	mg/L	1
Cyanide	mg/L	0.1
Detergents	mg/L	15

FISHERIES EFFLUENT QUALITY STANDARDS

Parameters	Units	Maximum Permissible Limits
Temperature: (at point of discharge).	°C	35
pH @25°C	pH units	5.5- 8.5
Total Suspended solids	mg/L	100
BOD ₅ @20°C	mg/L	50
COD	mg/L	300
Total Nitrogen (N)	mg/L	50
Nitrite (N)	mg/L	50
TKN (N)	mg/L	50
Free chlorine	mg/L	0.5
Oil and grease	mg/L	10
Total coliforms	Cfu/100ml	500
E Coli	Cfu/100ml	100
Intestinal Enterococci	Cfu/100ml	100
Salmonella		Absent

SCHEDULE 3*[Regulation 8 (1)]***SEYCHELLES CODE OF PRACTICE FOR WASTEWATER
EFFLUENT STANDARDS**

For further information, please contact:

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Disclaimer:

This publication is intended to be used as a guide only. It seeks to explain the possible obligations of entities whose activities are likely to produce effluent or otherwise affect water quality. Further information should be sought from the Ministry of Agriculture, Climate Change and Environment regarding obligations not captured in this publication and, where appropriate, legal advice should also be sought.

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Summary

This Code of Practice on effluent standards applies to all entities whose activities are likely to produce and discharge effluent in the Seychelles, otherwise referred to as dischargers. The primary focus of the Code of Practice is the discharge of effluent into any watercourse or in the territorial waters. The code is divided into 2 parts.

Part A establishes the legal framework and institutional arrangements which are applicable to the management of effluent. In this context, reference is made to the Environment Protection Act, 2016, the Environment Protection (Effluent Standards) Regulations, 2023, and other pieces of legislation such as the Public Utilities Corporation Act.

Measures to regulate the discharge of effluent and to prevent water pollution are outlined in Part B. In creating guidelines, different sources of effluent and wastewater are addressed.

In order to support the guidelines for the prevention of water pollution, Part B also includes a section on wastewater overflow and management. It is applicable to all wastewater systems that collect, treat and dispose of wastewater whether from domestic, agricultural, trade or industrial origin. It also applies to all scenarios where reuse of such wastewater occurs. In this respect, the Code of Practice provides guidance and, where applicable, instruction to entities whose activity operates a wastewater system to prevent the occurrence of overflows as much as possible, and to minimize the frequency and volume of such overflows. The designated operators of such wastewater systems are obliged to comply with the Code of Practice.

Introduction

This Code of Practice is intended to further the objectives of the Environment Protection Act and Regulations made thereunder, in particular the Environment Protection (Effluent Standards) Regulations, 2023. The overarching purpose of the Code of Practice is to provide guidance and directions to entities whose activities are likely to produce effluent or otherwise affect water quality including but not limited to industries engaged in activities which may produce wastewater likely to contaminate the aquatic environment if not properly discharged.

The Government is designing an integrated water resources management legal framework which takes account of all environmental considerations relating to water quality. This Code of Practice is intended to support this legal framework and meet the objectives of the Environment Protection Act by setting out specific standards based on the effluent of domestic, agricultural, trade or industrial origin.

Role of the Code of Practice

The Code of Practice provides guidance and directions for all businesses or establishments whose activities are likely to produce effluent. The Code of Practice includes information on:

- Policy and legal background including the grant of authorization to discharge effluent;
- Measures to be taken with regard to the discharge of effluent in order to prevent water pollution; and
- Measures to deal with the overflow of wastewater or any other liquid with or without particles of matter in suspension therein.

Failure to comply with the Code of Practice

Pursuant to regulation 8 of the Environment Protection (Effluent Standards) Regulations, 2023, the Minister may revoke an authorisation to discharge effluent where the entity which was granted the authorisation failed to comply with this Code of Practice.

Definitions

For the purposes of this Code of Practice, the terms referred to throughout the publication will bear the following meanings unless otherwise stated:

- | | |
|--------------|--|
| “discharger” | a business or establishment that has been granted a discharge permit. |
| “effluent” | waste water or any other liquid with or without particles of matter in suspension therein, of domestic, agricultural, trade or industrial origin treated or untreated, and discharged directly or indirectly into the environment; |

“Discharge Permit”	means a permit issued by the Minister or Ministry to discharge effluent;
“operator”	an organisation responsible for the operation and maintenance, monitoring, or internal regulation or assessment of the performance or management of a wastewater system;
“pollution”	the presence in the aquatic environment of one or more pollutants;
“Ministry”	means the Ministry responsible for Environment;
“trade waste”	the liquid waste generated from any industry, business, trade, or manufacturing process. It does not include domestic wastewater;
“watercourse”	includes any river, stream, dam, reservoir, water catchment and wetlands and drains or channels;
“wastewater”	The return water after either domestic or industrial use which waste may be organic (typically domestic wastewater) or inorganic (typically from industries; OR used water from any combination of domestic, industrial, commercial or agricultural activities, surface runoff, storm water, and any sewer inflow or sewer infiltration;
“waste water overflow”	an overflow from a wastewater system;
“Water Service Provider”	Entities or industries engaged in the public supply of water which is suitable for human consumption and, specifically including but not limited to the Public Utilities Corporation.

Part A - Legal Framework and Institutional Arrangements

The Government of Seychelles has an obligation under article 38(a) of the

Constitution to take measures to promote the protection, preservation, and improvement of the environment. One such measure is the enactment of the Environment Protection Act. Under the Environment Protection Act, the Minister responsible for the environment has the power to, amongst other things, make Regulations for effluent standards and authorize the discharge of effluent on land, in the watercourse or territorial waters.

In line with the powers and obligations of the Minister, the Environment Protection (Effluent Standards) Regulations, 2022, were made to improve the management of effluent discharge in Seychelles. The Environment Protection (Effluent Limitations) Regulations, 2022 relate to discharge to the environment.

Effluent Standards for discharge to the sewer are given in the Public Utilities Corporation Pre-treatment Standards and the Public Utilities Corporation Act (“PUC Act”).

Part B - Control of the Discharge of Effluent and Water Pollution Control

Effluent is waste water of domestic, agricultural, trade or industrial origin, treated or untreated, and discharged directly or indirectly into the environment.

Effluent, if not properly treated, can cause significant problems for human health and the environment into which they are discharged. The effects of improper treatment ranges from oxygen depletion and subsequent death of marine life, adverse effects on human health, discoloration of water rendering it unattractive for aquatic recreation and rendering the water unfit for domestic use or aquatic life.

These guidelines are intended to assist businesses or establishments whose activities are likely to produce effluent in:

- Determining the effluent quality as it is released into the environment;
- Assessing the operational efficiency of their wastewater treatment system; and
- Monitoring industrial effluent in their areas.

Responsibility of Dischargers to Establish an Operation and Maintenance Program

Every discharger should establish an Operation and Maintenance program, with:

- 1) daily operations required including a checklist and recording of any data such as pressures and flow rates, recording of any faults or anything out of the ordinary, and
- 2) daily, weekly, monthly, annual maintenance including a checklist.

The following section outlines the approach to be taken with respect to wastewater based on its type or source:

1. **Domestic Effluent:** Domestic effluent shall be treated in accordance with Schedule 1 in Environment Protection (Effluent Standards Regulations), 2022 before being discharged into a or watercourse. If such effluent is to be discharged into a public sewer, it must first meet the pre-treatment requirements.
2. **Trade/Industrial Effluent:** Trade and industrial effluent shall be treated in accordance with Schedule 1 in Environment Protection (Effluent Standards) Regulations, 2022 before being discharged into a public sewer or watercourse or in the territorial waters. In the case of discharge into a public sewer, the effluent must meet the Pre-treatment requirements.
3. **Rain Water:**
 - 3.1. Rainwater shall not be discharged into a public sewer.
 - 3.2. Rain water shall be channelled into a watercourse or into the territorial waters.
 - 3.3. Contaminated rainwater from process areas shall be collected and treated before being discharged into any watercourse or territorial waters.
4. **Wastewater from Laboratories:**
 - 4.1. The lab or any businesses must seek PUC consent before discharging the waste water directly into the sewer.

- 4.2. Discharge from lab to a sewer must meet PUC Pre-treatment requirements.

5. Wastewater from Farms:

5.1. Aquaculture Farms

Effluent generated from aquaculture farms shall be treated to comply with the established limits before it is discharged into a watercourse or in the territorial waters.

5.2. Livestock Farms

5.2.1. Effluent generated shall be collected and treated to comply with the allowable discharge limits before discharging into a public sewer. Such effluent must meet the PUC Pre-treatment Standards before being discharged into the public sewer.

5.2.2. Such effluent may be discharged into a watercourse or in the territorial waters where a public sewer is not available.

5.3. Other activities- See the new Regulations .

Obligation to Monitor Water Pollution

1. The owner or occupier of any industrial premises from which any trade effluent or hazardous substances are generated and discharged into the marine environment need to install suitable monitoring equipment or system, as agreed by the Minister.
2. Such monitoring equipment or system must be installed at any point along the line of discharge.
3. The owner or occupier of the industrial premises with monitoring equipment or systems installed shall:
 - a. ensure that such equipment or system is working in a proper and efficient manner;
 - b. keep a proper record of all monitoring results; and
 - c. Submit the records to the Ministry.

Measures During the Commissioning of a Wastewater Treatment System

The Ministry must be informed when the treatment plant is being commissioned.

When the treatment plant is being commissioned, effluent must be tested at the following interval:

1. after 6 weeks,
2. 8 weeks, and
3. 12 weeks.

This is to be done until the system settles with sufficient bacteria.

To test the effluent, the samples can be taken to the certified laboratory under the EPA.

Results should be submitted to the Ministry.

During the commission process, the operator must ensure that enough chlorine is added into the effluent to ensure that the microbiological content is reduced until the system settles and meet the Effluent Standards.

The Proposed treatment plant should meet Effluent standard as per the latest (Effluent Standards) Regulations, 2022.

Authorisation to discharge effluent by outfall at sea, any water course or for irrigation purposes should be sought from the Ministry.

Measures Following the Commissioning of a Wastewater Treatment System.

Dischargers whose industry operates a wastewater system must, once their wastewater treatment system has been commissioned, implement the following measures:

1. a routine monitoring and evaluation programme should be established;
2. compliance with established discharge standards should be determined; and

3. Remedial methods to avoid pollution of receiving waters should be implemented.
4. A Contingency and maintenance plan must be in place and approved by Ministry.

Monitoring Program to Assess Water Quality

Entities engaged in activities which are likely to negatively affect water quality must implement the monitoring programmes established by the Minister to assess the effect of the entity's activities on the water quality in situ and, where applicable, further downstream.

Types of Monitoring Programmes

A monitoring programme should include:

1. self-monitoring;
2. unscheduled monitoring;
3. demand monitoring.

Self-monitoring

Self-monitoring should be undertaken by the owner or entity in occupation or control of the place or premises that generates effluent pursuant to the Environment Protection (Effluent Standards) Regulations, 2022. Under the self-monitoring programme, each discharger is required to do its own sampling and analysis. The monitoring frequency should not be less than the minimum requirement established by the Effluent Discharge Permit. However, the discharger may perform self-monitoring more frequently than specified in the authorization.

Unscheduled Monitoring

Unscheduled monitoring is a less formal type of surveillance which is carried out by an authorized officer within the meaning of the Environment Protection Act. The Ministry is authorized to do testing when there is a problem or if it suspects that self-monitoring analytical results are being falsified.

Demand Monitoring

Demand monitoring should also be conducted by authorized officers within the meaning of the Environment Protection Act. This should be done when there is a disruption in the system's operations.

Nothing in this Code of Practice prevents an officer of the Public Utilities Corporation from inspecting a place or premises and testing effluent pursuant to Pre-treatment Standards established by the PUC Act.

Matters Related to Collecting Samples for Water Quality Testing where Effluent is Discharged

In collecting samples, attention should be paid to:

1. Sampling points;
2. Sample collection procedure; and
3. Sample analysis.

Sampling points

These are specific points at which samples are typically collected for testing. Each sampling point should be given a specific designation. Sampling bottles obtained from the laboratory should be used.

Collection bottles should be obtained from the laboratory doing the analysis so that they have been cleaned properly and disinfected.

The points for sample collection will be determined by the type of effluent or wastewater. Samples may be collected from the following points in each respective case:

1. Influent (raw sewage)- at a convenient point after screening and detritus removal, but before primary settling;
2. Effluent from primary settling tanks - a point at the lowest end of the effluent channel to allow thorough mixing;
3. Effluent from aeration channels - in case of an activated sludge plant, where a grab sample of mixed liquor is taken;
4. Effluent of humus tank or final clarifier - taken from effluent channel if possible;

5. Sand filter effluent - from effluent channel or sump;
6. Final effluent to stream - which can be from maturation ponds or from river, from grass plots or from reed-beds; and
7. Receiving stream - above and below point of discharge, if necessary.

General Guidelines in relation to Sampling Points

- More complex industries may have more sampling points.
- Sampling points must be arranged so that an accurate assessment of the performance of each unit of the plant is obtained.

Guidelines in relation to Sampling Plans

A sampling plan should be in **written form, user-friendly to the sampling staff** and should include but not be limited to the following items:

- Monitoring point(s) description;
- Sampling methods and protocols;
- Flow monitoring and calibration;
- pH monitoring and calibration;
- Parameters for analyses;
- Appropriate sample containers, preservatives and storage;
- Sample identification and chain unit; and
- Specification of custody procedures

Sample collection procedure

One of the following four methods of sampling may be implemented:

1. Grab (spot) sampling;
2. Composite sampling over a short period of time;
3. Composite sampling over 24 hours; or
4. Composite sampling over 24 hours in relation to flow.

The following should be noted in respect of each sampling method:

- Grab (spot) sampling is not representative and can only give a rough idea of the effluent quality at the time of sampling.

- Composite sample over a short period is more or less representative of the sewage or effluent quality over that period.
- The composite sample over 24 hours requires that sampling shifts be arranged over the day. The even-sized samples should be collected hourly or half-hourly and the main sample made up from this after thorough stirring. Where possible, composite sampler should be purchased, installed and commissioned so as to reduce the instances of physically having to change shifts by officers from the Department of Environment.
- Composite samples in relation to flow can only be collected if the works has a flow meter and recorder. Samples are best collected separately at intervals of one hour over the sampling period.
- When taking samples, it should be ensured that the sample is taken from the body of the water (flowing or stagnant) and not just from the surface.

Sample Analysis

Laboratories which conduct water and effluent testing shall:

- have a recognized certification for the test method and the analyte(s) being measured; and
- Ensure that proficiency tests are performed in each matrix/analyte combination (where available) for which certification is sought.

Wastewater Overflow Management

Background

In order to protect water supply, it is important for wastewater overflows to be properly managed. Left unregulated, such wastewater is a potential source of pollutants that negatively impact Seychelles fresh, coastal and marine water quality and its associated uses. The object of this Part of the Code of Practice is to lessen the occurrence of such overflow by proposing mitigation measures related to impacts caused by wastewater overflows.

Application

This Part of the Code of Practice applies to all operators dealing with the collection, treatment and disposal of wastewater. It establishes the principles

of wastewater system management and provides wastewater abatement mechanisms.

In the event of overflow, the following steps should be taken:

- The discharger should notify the Ministry and Department of Health immediately,
- The discharger should post signs in the vicinity of the overflow, and in the watercourse or ocean that the overflow is going to. For example, placement of “No Swimming” signs.
- The discharger should then take all possible steps to stop the overflow, such as making repairs or process adjustments as necessary.
- Once the overflow has been stopped, the discharger should: 1) Clean and disinfect areas affected by the overflow as necessary, and 2) take the steps necessary to prevent the overflow from occurring again, such as replacing worn pipes and equipment, training operators if there was a human error, ensuring that there are sufficient spare parts in the inventory for making replacements or repairs quickly, or increasing the capacity of the collection and treatment facilities.

Emergency Contingency Plan

Objective - To minimise the impacts of wastewater overflow.

Guidelines:

- Operators must have an emergency contingency plan which facilitates a 24-hour emergency response to minimize or eliminate overflows and which must be considered by the response team in the event of an emergency.
- The emergency contingency plan must be developed for all wastewater systems and should have regard to: the availability of infrastructure details, operation and maintenance plans, appropriately trained and equipped personnel and reporting procedures for relevant entities.
- Emergency response personnel and Authorized officers should have access to all wastewater facilities and the necessary equipment and information to manage wastewater overflows.

- The cause of the overflow must be identified and addressed as soon as practicable. This may be done in two stages; temporarily stopping the overflow and undertaking permanent repairs.
- Where practical, the contingency plan should also include containment measures. Containment should aim to capture the overflow while it is occurring so that as much wastewater as practicable is returned to the wastewater system when operations resume as normal.
- For prolonged emergencies (marked by major overflow events greater than one or two days) consideration should be given to restricting inflows to the system.
- During containment, and clean-up or remediation, the risk to human health must be managed. Access to the area should be restricted with temporary emergency fencing and by erecting warning signs. Any residents or members of the public likely to be directly affected by the overflow should be informed. Warning measures must remain in place until the risk to human health arising from the overflow has passed.
- Water sampling may be done if required and carried out in accordance with the guidance of the Ministry.

MADE this 19th day of July, 2023.

**FLAVIEN JOUBERT
MINISTER OF AGRICULTURE,
CLIMATE CHANGE AND ENVIRONMENT**
