

# Annual Environmental Report

2021



Portrane Donabate

D0114-02

## **CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER**

- 1.1 ANNUAL STATEMENT OF MEASURES
- 1.2 TREATMENT SUMMARY
- 1.3 ELV OVERVIEW
- 1.4 LICENSE SPECIFIC REPORT INCLUDED IN AER

### **2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY**

- 2.1 PORTRANE WWTP - TREATED DISCHARGE
  - 2.1.1 INFLUENT SUMMARY - PORTRANE WWTP
  - 2.1.2 EFFLUENT MONITORING SUMMARY - PORTRANE WWTP -
  - 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE -
  - 2.1.4 OPERATIONAL REPORTS SUMMARY FOR PORTRANE WWTP
  - 2.1.5 SLUDGE/OTHER INPUTS TO PORTRANE WWTP

### **3 COMPLAINTS AND INCIDENTS**

- 3.1 COMPLAINTS SUMMARY
- 3.2 REPORTED INCIDENTS SUMMARY
  - 3.2.1 SUMMARY OF INCIDENTS
  - 3.2.2 SUMMARY OF OVERALL INCIDENTS

### **4 INFRASTRUCTURAL ASSESSMENT AND PROGRAMME OF IMPROVEMENTS**

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
  - 4.1.1 SWO IDENTIFICATION AND INSPECTION SUMMARY REPORT
- 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS
  - 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.2 IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.3 SEWER INTEGRITY RISK ASSESSMENT

### **5 LICENCE SPECIFIC REPORTS**

### **6 CERTIFICATION AND SIGN OFF**

- 6.1 SUMMARY OF AER CONTENTS

### **7 APPENDIX**

- 7.1 AMBIENT MONITORING SUMMARY

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0114-02, Portrane Donabate, in Dublin in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

## 1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

There were no capital works, significant changes or operational improvements undertaken in 2021.

## 1.2 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- Portrane WWTP with a Plant Capacity PE of 65000, the treatment type is 2 - Secondary treatment.

## 1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF0900D0114SW001	Portrane WWTP	Treated	Compliant	N/A

## 1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
<b>There are no Licence Specific Reports included in this AER.</b>

## 2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

### 2.1 PORTRANE WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - PORTRANE WWTP

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
ortho-Phosphate (as P) - unspecified mg/l	50	11	4.39
Total Phosphorus (as P) mg/l	50	55	12
Total Nitrogen mg/l	50	92	57
Ammonia-Total (as N) mg/l	50	55	38
pH pH units	50	7.70	7.51
COD-Cr mg/l	50	3078	1121
Suspended Solids mg/l	50	2668	703.79
BOD, 5 days with Inhibition (Carbonaceous) mg/l	47	1328	418
Hydraulic Capacity	N/A	22569	9323

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

## Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional 'Operational Performance Summary'. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

### 2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF0900D0114SW001

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included <sup>Note 1</sup>	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
<b>COD-Cr mg/l</b>	125	250	N/A	50	N/A	N/A	35	Pass
<b>Suspended Solids mg/l</b>	35	87.5	N/A	50	N/A	N/A	6.11	Pass
<b>Dissolved Inorganic Nitrogen (as N) mg/l</b>	30	36	N/A	50	N/A	N/A	8.54	Pass
<b>BOD, 5 days with Inhibition (Carbonaceous) mg/l</b>	25	50	N/A	47	N/A	N/A	2.94	Pass
<b>pH pH units</b>	6.00	9.00	N/A	50	N/A	N/A	7.53	Pass
<b>Nitrite (as N) mg/l</b>	N/A	N/A	N/A	50	N/A	N/A	0.306	
<b>Nitrate (as N) mg/l</b>	N/A	N/A	N/A	50	N/A	N/A	6.73	

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included <sup>Note 1</sup>	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
<b>Coliform Bacteria (Total) no./100mls</b>	N/A	N/A	N/A	49	N/A	N/A	3723	
<b>Total Oxidised Nitrogen (as N) mg/l</b>	N/A	N/A	N/A	50	N/A	N/A	7.04	
<b>Total Nitrogen mg/l</b>	N/A	N/A	N/A	50	N/A	N/A	10	
<b>Ammonia-Total (as N) mg/l</b>	N/A	N/A	N/A	50	N/A	N/A	1.50	
<b>E. Coli no./100mls</b>	N/A	N/A	N/A	49	N/A	N/A	539	
<b>Enterococci (Intestinal) no./100mls</b>	N/A	N/A	N/A	10	N/A	N/A	160	
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	N/A	N/A	N/A	50	N/A	N/A	2.34	
<b>Conductivity @20°C µS/cm</b>	N/A	N/A	N/A	50	N/A	N/A	1221	
<b>Total Phosphorus (as P) mg/l</b>	N/A	N/A	N/A	50	N/A	N/A	2.78	

Notes:

1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

### Cause of Exceedance(s):

Not applicable

### Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

## 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0900D0114SW001

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
Downstream	326976, 250010	CW09001003DB7002	Yes	No	No	No	High
Donabate-Balcarrick Beach (Shore monitoring)	325155, 249127	IEEABWC020-0000-0100	Yes	No	No	No	High
Brook Beach Portrane (Shore monitoring)	325556, 251043	IEEABWC020-000-0200	Yes	No	No	No	High

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient monitoring summary**.

### Significance of Results:

The WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.



The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

The discharge from the wastewater treatment plant does not have an observable impact on the coastal or bathing waters water quality.

## 2.1.4 OPERATIONAL PERFORMANCE SUMMARY - PORTRANE WWTP

### 2.1.4.1 Treatment Efficiency Report - Portrane WWTP

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
<b>COD</b>	3882593	116199	97
<b>cBOD</b>	1541546	9748	99
<b>TN</b>	199123	33492	83
<b>SS</b>	2437520	20429	99
<b>TP</b>	41359	9310	77

Note: The above data is based on sample results for the number of dates reported

### 2.1.4.2 Treatment Capacity Report Summary - Portrane WWTP

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

Portrane WWTP	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	46800
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	15600
<b>Current Hydraulic Loading - annual max (m<sup>3</sup>/day)</b>	22569
<b>Average Hydraulic loading to the Treatment Plant (m<sup>3</sup>/day)</b>	9323
<b>Organic Capacity (PE) - As Constructed</b>	65000
<b>Organic Capacity (PE) - Collected Load (peak week)<sup>Note1</sup></b>	34640
<b>Organic Capacity (PE) - Remaining</b>	30360
<b>Will the capacity be exceeded in the next three years? (Yes/No)</b>	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.

## 2.1.5 SLUDGE / OTHER INPUTS - PORTRANE WWTP

'Other inputs' to the waste water treatment plant are summarised in table below

Input type	Quantity	Unit	P.E.	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
<b>Landfill Leachate (delivered by sewer network)</b>	18126	Volume (m <sup>3</sup> )	221	0.53	Yes	Yes	No

## 3 COMPLAINTS AND INCIDENTS

### 3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
<b>There were no relevant environmental complaints in 2021.</b>			

### 3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Irish Water but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

### 3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
<b>There were no reportable incidents in 2021.</b>				

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
<b>Number of Incidents in 2021</b>	0
<b>Number of Incidents reported to the EPA via EDEN in 2021</b>	0
<b>Explanation of any discrepancies between the two numbers above</b>	N/A

## 4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

### 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

#### 4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2021 (No. of events)	Total volume discharged in 2021 (m <sup>3</sup> )	Monitoring Status
TBC	324413, 253047	No	Low	Not Meeting	2	966	Monitored
TBC	324421, 250901	No	Medium	Not Meeting	Unknown	Unknown	Not Monitored
TBC	323078, 250697	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	325667, 249787	No	Low	Meeting	6	20380	Monitored
SW004	325983, 249761	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much sewage was discharged via monitored SWOs in the agglomeration in the year (m <sup>3</sup> )?	21,346
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

## 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS

### 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
<b>D0114-SIP:01</b>	If SW010 not in compliance with DoEHLG criteria following assessment, upgrade of sewer network to ensure stormwater overflow meets DoEHLG criteria	C	31/12/2025	No	Not Started		

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
<b>D0114-SIP:02</b>	If SW009 not in compliance with DoEHLG criteria following assessment, upgrade of sewer network to ensure stormwater overflow meets DoEHLG criteria	C	31/12/2022	No	Not Started		
<b>D0114-SIP:03</b>	If additional storm water overflows assessed in accordance with Condition 3.4.4 not in compliance with DoEHLG criteria following assessment, upgrade of sewer network to ensure stormwater overflow meets DoEHLG criteria.	C	31/12/2025	No	Not Started		

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

#### 4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
<b>No additional improvements planned at this time.</b>				

#### 4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Tables 4.2.1 and 4.2.2.



## 5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Licence Specific Report	Required by licence	Year included in AER	Included in this AER
<b>There is no Licence Specific Report Required in this AER Annual Review.</b>			

## 6 CERTIFICATION AND SIGN OFF

### 6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e., have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Has a Technical amendment/licence review application been submitted to the Agency by IW?	No
List reason e.g., additional SWO identified	N/A
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	No
List reason e.g., changes to monitoring requirements	N/A
Have these processes commenced?	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Date: 27/07/2022

This AER has been produced by Irish Water's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of,

Katherine Walshe

Acting Head of Environmental Regulation.

## 7 APPENDIX

Appendix

**Appendix 7.1 - Ambient monitoring summary**

## Portrane Ambient Monitoring Data 2021

### Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Northwestern Irish Sea DB7002 - Portrane	326976, 250010	CW09001003DB7002	No	No	No	No	High
Donabate-Balcarrick Beach (Shore monitoring)	325155, 249127	IEEABWC020-0000-0100	Yes	No	No	No	High
Brook Beach Portrane (Shore monitoring)	325556, 251043	IEEABWC020-000-0200	Yes	No	No	No	High

### 2021 Ambient Monitoring Summary - Northwestern Irish Sea, Portrane (DB7002)

Sample Date	Biochemical Oxygen Demand	Dissolved Oxygen % Saturation	pH	DIN	E Coli	Intestinal enterococci
	mg/l	% Sat.	pH Unit	mg/l N	cfu/100ml	cfu/100ml
27/05/2021	2.7	106.9	8.15	0.72	0	0
15/06/2021	2.1	108.8	8.7	0.50	0	0
15/07/2021	< 2	118.6	8.11	< 0.50	0	0
19/08/2021	< 2	102.6	8.30	0.51	2	1
06/09/2021	< 2	94.3	7.7	< 0.52	0	0
13/10/2021	2.2	101.6	8.16	0.51	0	0
17/11/2021	< 2	96.6	8.2	< 0.52	0	0
15/12/2021	< 2	94.1	8.35	< 0.52	0	0

**Donabate-Balcarrick Beach (Shore Monitoring) - IEEABWC020-0000-0100**

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
06/09/2021	20	4	Excellent
31/08/2021	<10	2	Excellent
17/08/2021	<10	5	Excellent
03/08/2021	<10	1	Excellent
19/07/2021	<10	15	Excellent
05/07/2021	41	11	Excellent
21/06/2021	10	7	Excellent
08/06/2021	<10	6	Excellent
24/05/2021	<10	2	Excellent

**Brook Beach Portrane (Shore Monitoring) - IEEABWC020-000-0200**

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
06/09/2021	30	5	Excellent
31/08/2021	<10	10	Excellent
17/08/2021	<10	<1	Excellent
03/08/2021	10	2	Excellent
19/07/2021	<10	<1	Excellent
05/07/2021	10	100	Excellent
21/06/2021	417	85	Good
08/06/2021	10	5	Excellent
31/05/2021	10	<1	Excellent

(Source: Beaches.ie)