Annual Environmental Report

2023

Portrane, Donabate, Rush, Lusk

D0114-02

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0114-02, Portrane, Donabate, Rush, Lusk, 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 changes undertaken in 2023.

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
There are no Licence Specific Reports included in this AER.

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
pH pH units	40	7.80	7.46
ortho-Phosphate (as P) - unspecified mg/l	40	9.54	3.86
Total Nitrogen mg/l	40	81	47
BOD, 5 days with Inhibition (Carbonaceous) mg/l	37	347	214
Suspended Solids mg/l	40	981	336
Total Phosphorus (as P) mg/l	40	19	7.00
COD-Cr mg/l	40	1417	558
Ammonia-Total (as N) mg/l	40	50	34
Hydraulic Capacity	N/A	21821	8770

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 Note 1	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)
COD-Cr mg/l	125	250	N/A	40	N/A	N/A	29	Pass
Suspended Solids mg/l	35	87.5	N/A	40	N/A	N/A	4.57	Pass
Dissolved Inorganic Nitrogen (as N) mg/l	30	36	N/A	40	N/A	N/A	7.80	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	25	50	N/A	37	N/A	N/A	2.84	Pass
pH pH units	6	9	N/A	40	N/A	N/A	7.55	Pass
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	40	N/A	N/A	2.42	

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	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)
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	40	N/A	N/A	0.517	
Total Nitrogen mg/l	N/A	N/A	N/A	40	N/A	N/A	8.71	
Nitrite (as N) mg/l	N/A	N/A	N/A	40	N/A	N/A	0.150	
Nitrate (as N) mg/l	N/A	N/A	N/A	40	N/A	N/A	7.14	
Conductivity @20°C µS/cm	N/A	N/A	N/A	40	N/A	N/A	1044	
Coliform Bacteria (Total) no./100mls	N/A	N/A	N/A	39	N/A	N/A	4571	
E. Coli no./100mls	N/A	N/A	N/A	39	N/A	N/A	1064	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	40	N/A	N/A	2.71	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	40	N/A	N/A	7.29	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

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	Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
Upstream	325155, 249127	IEEABWC020-0000-010	Yes	No	No	No	Good
Downstream	326976, 250010	CW09001003DB7002	Yes	No	No	No	Good

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 coastal/transitional 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 WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.

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

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

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

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

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)
SS	1051983	17129	98
cBOD	649495	10531	98
TN	148615	32635	78
COD	1747788	106985	94
TP	21923	10166	54

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	
Peak Hydraulic Capacity (m^3/day) - As Constructed	46800
DWF to the Treatment Plant (m^3/day)	15600
Current Hydraulic Loading - annual max (m^3/day)	21821
Average Hydraulic loading to the Treatment Plant (m^3/day)	8770
Organic Capacity (PE) - As Constructed	65000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	35968
Organic Capacity (PE) - Remaining	29032
Will the capacity be exceeded in the next three years? (Yes/No)	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 the 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)
Landfill Leachate (delivered by sewer network)	26,277	Volume (m^3)	320	0.82	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
There were no relevant environmental complaints in 2023.			

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 Uisce Éireann 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	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Network Infrastructure	No	No
Uncontrolled release	Emergency overflow caused by power failure	No	Yes
Uncontrolled release	Emergency overflow caused by ragging or blocking	No	Yes

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Abatement equipment off-line	Plant or equipment maintenance at WWTP	No	Yes
Uncontrolled release	Broken Sewer Pipe	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	No	Yes
Uncontrolled release	Emergency overflow caused by power failure	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	8
Number of Incidents reported to the EPA via EDEN in 2023	8
Explanation of any discrepancies between the two numbers above	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 2023(No. of events)	Total volume discharged in 2023 (m^3)	Monitoring Status
SW002	326936 253560	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW004	325983 249761	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	324413 253046	No	Low Significance	Meeting Criteria	219	102603	Monitored
TBC	324421 250901	No	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	323078 250697	No	Low Significance	Meeting Criteria	254	850	Monitored
TBC	325667 249787	No	Low Significance	Meeting Criteria	272	49702	Monitored

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 2023(No. of events)	Total volume discharged in 2023 (m^3)	Monitoring Status
TBC	327753 254138	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	TBC	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	TBC

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 wastewater discharge by metered SWOs during the year (m3)?	153155
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
SIP-D0114.01	If not in compliance with DoECLG criteria following assessment, upgrade of sewer network to ensure stormwater overflow meets DoECLG criteria: For all other waterbodies	C	23/04/2021	No	Not Started		General assessment carried out on a national basis as agreed with the EPA
SIP-D0114.02	If not in compliance with DoECLG criteria following assessment, upgrade of sewer network to ensure stormwater overflow meets DoECLG criteria: For waterbodies Balcunnin_010, Ballyboghil_010, Rogerstown Estuary	C	24/04/2021	No	Not Started		Estimated completion date TBC

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
SIP-D0114.03	If not in compliance with DoECLG criteria following assessment, upgrade of sewer network to ensure stormwater overflow meets DoECLG criteria: TPEFF3900D0114SW009	C	25/04/2021	No	Not Started		Estimated completion date TBC
SIP-D0114.04	If not in compliance with DoECLG criteria following assessment, upgrade of sewer network to ensure stormwater overflow meets DoECLG criteria: TPEFF3900D0114SW010	C		No	Not Started		Estimated completion data TBC

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
No additional improvements planned at this time.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

N/A

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	Included in this AER
There is no Licence Specific Report Required in this AER Annual Review.		

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
Is there a need to advise the EPA for Consideration of a Technical Amendment/Review of the Licence?	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: 28/02/2024

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

Eleanor Roche

Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient Monitoring Summary

Portrane Ambient Monitoring Data 2023

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	Good
Donabate-Balcarrick Beach (Shore monitoring)	325155, 249127	IEEABWC020-0000-0100	Yes	No	No	No	Good
Brook Beach Portrane (Shore monitoring)	325556, 251043	IEEABWC020-000-0200	Yes	No	No	No	Good

2023 Ambient Monitoring Summary - Northwestern Irish Sea, Portrane (DB7002)

Sample Date	Biochemical Oxygen Demand	Dissolved Oxygen % Saturation	pH	DIN	E Coli	Dissolved Oxygen	Intestinal enterococci
	mg/l	% Sat.	pH Unit	ug/l N	cfu/100ml	mg/L	cfu/100ml
27/03/2023	3.4	101.5	8.17	0.94	0	11.56	0
08/05/2023	1.9	96.7	7.94	0.56	0	10.48	0
02/10/2023	3.9	100.2	8.24	0.68	20	10.25	3
01/12/2023	2.7	89.4	8.2	< 0.5	6	8.81	41

Donabate-Balcarrick Beach (Shore Monitoring)

Date	Escherichia coli (MPN/100ml)	Intestinal enterococci (CFU/100ml)	Floating materials	Mineral Oil (visual)	pH	Phenols (Olfactory)	Salinity (PSU)	Surfactants	Visual Inspection
30/05/2023	<10	<1	Absent	Absent	8.1	Absent	32.9	Absent	Normal
12/06/2023	31	10	Absent	Absent	8.1	Absent	33.5	Absent	Normal
27/06/2023	<10	3	Absent	Absent	8.1	Absent	33.7	Absent	Normal
11/07/2023	41	17	Absent	Absent	8.1	Absent	33.6	Absent	Normal
17/07/2023	122	15	Absent	Absent	8.1	Absent	33.7	Absent	Normal
31/07/2023	41	14	Absent	Absent	8.2	Absent	33	Absent	Normal
08/08/2023	10	6	Absent	Absent	8	Absent		Absent	Normal
28/08/2023	<10	2	Absent	Absent	8.1	Absent	32.7	Absent	Normal
11/09/2023	<10	8	Absent	Absent	8.1	Absent	33.4	Absent	Normal

Brook Beach Portrane (Shore Monitoring)

Date	Escherichia coli (MPN/100ml)	Intestinal enterococci (CFU/100ml)	Floating materials	Mineral Oil (visual)	pH	Phenols (Olfactory)	Salinity (PSU)	Surfactants	Visual Inspection
29/05/2023	<10	<1	Absent	Absent	8	Absent	33.4	Absent	Normal
12/06/2023	20	59	Absent	Absent	8	Absent	33.5	Absent	Normal
26/06/2023	<10	7	Absent	Absent	8.1	Absent	33.4	Absent	Normal
11/07/2023	10	24	Absent	Absent	8.1	Absent	33.4	Absent	Normal
17/07/2023	10	<1	Absent	Absent	8.1	Absent	33.8	Absent	Normal
31/07/2023	1376	940	Absent	Absent	8	Absent	33.3	Absent	Normal
08/08/2023	20	15	Absent	Absent	8	Absent		Absent	Normal
28/08/2023	41	53	Absent	Absent	8	Absent	33.6	Absent	Normal
11/09/2023	20	3	Absent	Absent	8	Absent	33.4	Absent	Normal

(Source: Dublin County Council Central Lab)