Annual Environmental Report

2020

Portrane Donabate

D0114-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0114-01, 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 major capital or operational changes undertaken in 2020.

1.2 TREATMENT SUMMARY

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

- Portrane WWTP - 2020 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 - 2020	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
There are no Licence Specific Reports included in the AER.	

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 PORTRANE WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - PORTRANE WWTP - 2020

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
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	37	759.00	306.74
COD-Cr mg/l	39	1943.00	807.98
Suspended Solids mg/l	38	3365.00	729.87
Total Nitrogen mg/l	39	92.80	51.16
Total Phosphorus (as P) mg/l	39	24.90	7.78
Hydraulic Capacity	N/A	21817	9168

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Chemical Oxygen Demand mg/l	125	250	N/A	39	N/A	N/A	29.94	Pass
Suspended Solids mg/l	35	87.5	N/A	38	1	N/A	5.43	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	25	50	N/A	38	N/A	N/A	2.66	Pass
pH pH units	6-9	6-9	N/A	39	N/A	N/A	7.57	Pass
Conductivity 20 C µS/cm	N/A	N/A	N/A	39	N/A	N/A	1182.34	
Total Nitrogen mg/l	N/A	N/A	N/A	39	N/A	N/A	10.16	
Nitrite (as N) mg/l	N/A	N/A	N/A	39	N/A	N/A	0.29	
Total Phosphorus mg/l	N/A	N/A	N/A	39	N/A	N/A	1.73	
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	39	N/A	N/A	1.65	

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	39	N/A	N/A	1.52	
Nitrate (as N) mg/l	N/A	N/A	N/A	39	N/A	N/A	7.01	
Dissolved Inorganic Nitrogen (as N) mg/l	N/A	N/A	N/A	39	N/A	N/A	8.93	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	39	N/A	N/A	7.28	
Coliform Bacteria (Total) no./100mls	N/A	N/A	N/A	39	N/A	N/A	2866.35	
E. Coli no./100mls	N/A	N/A	N/A	39	N/A	N/A	304.98	

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	Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Northwestern Irish Sea DB750 - Portrane	326975, 250009	CW09001003DB7002	No	No	No	Yes	High
Donabate-Balcarrick Beach (Shore monitoring)	325155, 249127	IEEABWC020-0000-0100	Yes	No	No	Yes	N/A
Brook Beach Portrane (Shore monitoring)	325556, 251043	IEEABWC020-000-0200	Yes	No	No	Yes	N/A

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.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - PORTRANE WWTP - 2020

2.1.4.1 Treatment Efficiency Report - Portrane WWTP - 2020

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)
cBOD	1073403	9076	99
COD	2836510	102658	96
SS	2574671	18711	99
TN	179600	34839	81
TP	27318	5946	78

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 - 2020

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 - 2020	
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)	21817
Average Hydraulic loading to the Treatment Plant (m^3/day)	9168
Organic Capacity (PE) - As Constructed	65000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	34415
Organic Capacity (PE) - Remaining	30585
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 - 2020

'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)
Landfill Leachate (delivered by sewer network)	19795	Volume (m3)	241	0.59	Yes	Yes	No
Landfill Leachate (delivered by tanker)	150	Volume (m3)	1.8	0	Yes	Yes	No
Industrial / Commercial Sludge	2724	Weight (Tonnes)	33	0.08	Yes	Yes	No
Waterworks Sludge	2523	Volume (m3)	31	0.08	Yes	Yes	No

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2020.			

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)
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	1
Number of Incidents reported to the EPA via EDEN in 2020	1
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	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
SW004	325983, 249761	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	324344, 253086	No	Low	Not Meeting	Unknown	Unknown	Monitored
TBC	324413, 253046	No	Medium	Not Meeting	Unknown	Unknown	Not Monitored
TBC	323072, 250698	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	326732, 249818	No	Low	Meeting	Unknown	9017	Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Unknown
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 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
D0114-SIP:01	Upgrading of sewer network and pump stations to comply with the criteria outlined in DoEHLG...	C	31/12/2011	Yes	Works Completed		
D0114-SIP:02	Construction of 600m outfall with 10 port diffuser	C	31/12/2011	Yes	Works Completed		

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
D0114-SIP:03	Installation of new secondary WWTP with appropriate disinfection system and ancillary works	C	31/12/2011	Yes	Works Completed		
D0114-SIP:04	Installation of storm balancing tanks at new WWTP	C	31/12/2011	Yes	Works Completed		
D0114-SIP:05	Upgrading of existing sewer network	C	31/12/2011	Yes	Works Completed		

A summary of the status of any improvements identified by under Condition 5.2 is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
There are no Improvements Programme for this Agglomeration.				

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 Table.

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 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	Reference to relevant section of AER
Priority Substances Assessment	Yes	2013	No	N/A
Shellfish Impact Assessment	Yes	2015	No	N/A
Toxicity of Final Effluent	Yes	*	No	N/A

**Toxicity testing has not been done on the effluent. This will be done at a later date if the new reviewed licence requires it.*

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2013.

5.2 SHELLFISH IMPACT ASSESSMENT

The Shellfish Impact Assessment Report has been included in the AER 2015.

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?	Yes
List reason e.g. additional SWO identified	New WWTP and agglomeration change
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?	Yes
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: 12/03/2021

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 2020

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
Upstream Monitoring Point	N/A	N/A					
Northwestern Irish Sea DB750 - Portrane	326975, 250009	CW09001003DB7002	No	No	No	Yes	High
Donabate-Balcarrick Beach (Shore monitoring)	325155, 249127	IEEABWC020-0000-0100	Yes	No	No	Yes	N/A
Brook Beach Portrane (Shore monitoring)	325556, 251043	IEEABWC020-000-0200	Yes	No	No	Yes	N/A

2020 Ambient Monitoring Summary

Sampling Point Description	Sample Date	Ammonia	BOD	Chlorophyll	DIN	DO	pH	Ortho Phosphate	Salinity	Temp	TON
		mg/l as N	mg/l O_2	mg/m^3	mg/l	% Sat.		mg/l P	PSU	°C	mg/l N
Northwestern Irish Sea, Portrane (DB750)	26/05/2020	< 0.02	< 2	< 4.00	< 0.80	108.0	8.10	< 0.02	34.8	12.6	< 0.8
Northwestern Irish Sea, Portrane (DB750)	07/09/2020	<0.02	<2	<4.00	<1.11	99.5	7.92	0.02	34.08	15.7	<0.7

Bathing Water Results 2020

Brook Beach

Balcarrick Beach achieved "*Excellent*" results in all cases for the 2020 Bathing Water season. However, Portrane, the Brook Beach was classified as having Poor Water Quality in 2019, based on the assessment of bacteriological results for the period 2016 to 2019 and consequently, an Advice Not To Swim restriction applied at the bathing water for the 2020 season.

The Escherichia coli and Intestinal enterococci results for the 2020 sample period are tabled below.

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
01/09/2020	10	21	Excellent
25/08/2020	31	24	Excellent
11/08/2020	41	19	Excellent
27/07/2020	52	26	Excellent
13/07/2020	<10	9	Excellent
29/06/2020	74	14	Excellent
15/06/2020	<10	2	Excellent
02/06/2020	<10	1	Excellent
25/05/2020	10	<1	Excellent

(Source: Beaches.ie)

Balcarrick Beach

Donabate, Balcarrick Beach was classified as achieving Good Water Quality in 2019 based on the assessment of bacteriological results for the period 2016 to 2019. Donabate, Balcarrick Beach had a Sufficient Water Quality rating in 2018 and 2017, and achieved a Good Water Quality rating in 2016. There is no 2020 classification.

The Escherichia coli and Intestinal enterococci results for the 2020 sample period are tabled below.

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
01/09/2020	63	8	Excellent
25/08/2020	63	25	Excellent
11/08/2020	<10	3	Excellent
27/07/2020	31	22	Excellent
13/07/2020	<10	11	Excellent
29/06/2020	20	149	Good
15/06/2020	20	1	Excellent
02/06/2020	<10	<1	Excellent
25/05/2020	<10	1	Excellent

(Source: Beaches.ie)