Annual Environmental Report

2019

Swords

D0024-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0024-01, Swords, 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 complete upgrade of the aeration system (2 old streams) at Swords WWTP is planned. This is due to commence by Q4 2020.

1.2 TREATMENT SUMMARY

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

- SWORDS WWTP with a Plant Capacity PE of 90000, the treatment type is 3NP - Tertiary N&P removal
- TOBERBURR WWTP with a Plant Capacity PE of 500, the treatment type is 2 - Secondary treatment

Currently there is a secondary discharge from the Toberburr Activated Sludge Treatment Plant. Toberburr is a Conventional Activated Sludge plant with an aeration tank, settlement tank and a sludge holding tank. It has a design PE of 500. The plant is currently operating effectively. A DAP study will be completed in Q4 2020 and this will determine the capacity of the network to receive additional flows from Toberburr WWTP.

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
TPEFF0900D0024SW002	TOBERBURR WWTP	Treated	Compliant	N/A
TPEFF0900D0024SW001	SWORDS WWTP	Treated	Non-Compliant	Total Nitrogen mg/l

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 SWORDS WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - SWORDS 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
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	24	504	278
Total Nitrogen mg/l	24	70.1	47.79
Suspended Solids mg/l	23	806	458.55
Total Phosphorus (as P) mg/l	24	9.67	7.08
COD-Cr mg/l	24	1314	693.69
Hydraulic Capacity	N/A	36691	14168

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’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF0900D0024SW001

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)
COD-Cr mg/l	125	250	N/A	33	N/A	N/A	31.43	Pass
Suspended Solids mg/l	35	87.5	N/A	33	N/A	N/A	14.36	Pass
Temperature °C	25	N/A	N/A	1	N/A	N/A	18	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	33	N/A	N/A	4.92	Pass
Total Nitrogen mg/l	15	18	N/A	33	6	2	12.73	Fail
pH pH units	9	9	N/A	33	N/A	N/A	7.89	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	33	N/A	N/A	1.07	Pass
Conductivity 20 C µS/cm	N/A	N/A	N/A	33	N/A	N/A	840.1	
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	33	N/A	N/A	1.72	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	33	N/A	N/A	0.67	

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)
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	33	N/A	N/A	10	
Dissolved Inorganic Nitrogen (as N) mg/l	N/A	N/A	N/A	33	N/A	N/A	11.71	
Nitrate (as N) mg/l	N/A	N/A	N/A	33	N/A	N/A	9.78	
Nitrite (as N) mg/l	N/A	N/A	N/A	33	N/A	N/A	0.22	

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):

Mechanical breakdown at plant.

Significance of Results:

The WWTP is not compliant for its ELV for Total Nitrogen. It is compliant for all other parameters.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0900D0024SW001

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	318960, 248006	RS08B021000	No	No	No	No	Poor
Downstream (BM140 - Barrack Br)	321268, 246845	TW09001008BM1003	Yes	No	No	No	Poor
Downstream (BM130 - Seatown East)	320527, 247216	TW09001008BM1002	Yes	No	No	No	Poor

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 Swords WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

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

It is unknown if the Swords WWTP is having an observable negative impact on the water quality downstream.

Based on effluent compliance it is not considered that the Toberburr WWTP is having an observable negative impact on the water quality downstream.

The discharges from the wastewater treatment plants do not have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - SWORDS WWTP

2.1.4.1 Treatment Efficiency Report - SWORDS 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	2538934	72472	97
TP	38901	5254	86
COD	3809778	153822	96
TN	262449	62275	76
cBOD	1832119	24069	99

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

2.1.4.2 Treatment Capacity Report Summary - SWORDS 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.

SWORDS WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	60750
DWF to the Treatment Plant (m^3/day)	20250
Current Hydraulic Loading - annual max (m^3/day)	36691

SWORDS WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	14168
Organic Capacity (PE) - As Constructed	90000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	57494
Organic Capacity (PE) - Remaining	32506
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 - SWORDS 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)
Domestic /Septic Tank Sludge	1804	Volume (m^3)	22	0.03	Yes	Yes	No

2.2 TOBERBURR WWTP - TREATED DISCHARGE

2.2.1 INFLUENT MONITORING SUMMARY - TOBERBURR 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
There is no Influent data for the TOBERBURR WWTP.			

2.2.2 EFFLUENT MONITORING SUMMARY - TPEFF0900D0024SW002

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)
COD-Cr mg/l	125.00	250.00	N/A	6	0	0	60.00	Pass
Suspended Solids mg/l	35.00	87.50	N/A	6	1	0	7.00	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25.00	50.00	N/A	6	0	0	12.00	Pass
pH pH units	9.00	9.00	N/A	6	0	0	8.10	Pass

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.

2.2.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0900D0024SW002

There is no ambient monitoring data for the Toberburr WWTP.

Based on effluent compliance it is not considered that the Toberburr WWTP is having an observable negative impact on the water quality downstream.

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

2.2.4 OPERATIONAL PERFORMANCE SUMMARY - TOBERBURR WWTP

2.2.4.1 Treatment Efficiency Report - TOBERBURR 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	N/A	858074815	N/A
COD	N/A	7354714304	N/A
TN	N/A	883877103	N/A
cBOD	N/A	1470961405	N/A

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TP	N/A	313805146	N/A

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

2.2.4.2 Treatment Capacity Report Summary - TOBERBURR 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.

TOBERBURR WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	N/A
DWF to the Treatment Plant (m^3/day)	N/A
Current Hydraulic Loading - annual max (m^3/day)	253
Average Hydraulic loading to the Treatment Plant (m^3/day)	37
Organic Capacity (PE) - As Constructed	500
Organic Capacity (PE) - Collected Load (peak week)[Note1]	776
Organic Capacity (PE) - Remaining	0
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.

2.2.5 SLUDGE / OTHER INPUTS - TOBERBURR 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)
There is no Sludge and Other Input data for the Toberburr WWTP included in the AER.							

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
6	Blocked Sewer	0	6

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)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Breach of ELV	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Breach of ELV	Plant or equipment breakdown at WWTP	1	No	Yes
Breach of ELV	Other	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	7
Number of Incidents reported to the EPA via EDEN in 2019	7
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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW25	319294, 247778	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	316721.56, 248013.23	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	317524.75, 245598.76	No	Low	Not Meeting	Unknown	Unknown	Monitored
TBC	318917.12, 247984.59	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	319292, 247612	No	Low	Meeting	Unknown	Unknown	Monitored
SW17	318045.64, 246421.40	Yes	Low	Meeting	Unknown	Unknown	Monitored
SW19	317410.86, 247127.46	Yes	Low	Meeting	Unknown	Unknown	Monitored

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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
TBC	313660, 246296	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	318083.1, 246639.2	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	319296.873, 245570.91	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	320127.5, 245433.3	No	Low	Meeting	Unknown	Unknown	Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	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
D0024-SIP:01	Installation of enhanced nutrient reduction measure(s) at WWTP, as required, to meet the emission limit values	C	31/12/2021	No	Works Completed		
D0024-SIP:02	Replacement of Toberburr WWTP with a pumping station and construction of rising mains and gravity sewers to divert all effluent to Swords WWTP for treatment	C	31/12/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.

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
D0024-SIP:03	SW002 (1) Toberburr Activated Sludge Treatment Plant to be discontinued	A	31/12/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
D0024-SIP:04	Upgrade of WWTP to cater for 90,000 p.e., with enhanced nutrient reduction, UV disinfection system, new storm water holding tank and ancillary works	C	31/12/2015	Yes	Works Completed		
D0024-SIP:05	Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoECLG "Procedures and Criteria in relation to Storm Water Overflows" (1995)	C	31/12/2015	Yes	At Planning Stage		Drainage Area Plan to be 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	2014	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2014.

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: 06/04/2020

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

Swords Ambient Monitoring Data 2019

Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	318960, 248006	RS08B021000	No	No	No	No	Poor
Downstream (BM140 - Barrack Br)	321268, 246845	TW09001008BM1003	Yes	No	No	No	Poor
Downstream (BM130 - Seatown East)	320527, 247216	TW09001008BM1002	Yes	No	No	No	Poor

2019 Ambient Monitoring Summary

Report for Samples Taken During the Period: **01/01/2019 - 31/12/2019**

Fingal County Council **Ambient Monitoring 2019**

ampling Poi	Sampling Point Description	Sampled Date	Ammonia µg/l as N	B.O.D. Saline mg/l	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	pH pH
130520	meadow, Balheary Bridge, confluence of Broadmeadow and Ward Rivers - Surface	03/04/2019 10:52	21	<1	1.7	4235	113	8.4
130520	meadow, Balheary Bridge, confluence of Broadmeadow and Ward Rivers - Surface	17/07/2019 09:10	80	1	5.3	2557	119	8.3
130540	(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	03/04/2019 11:10	6521	2	11.6	8040	109	8.2
130540	(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	11/04/2019 11:20	9757	1	4.2	10951	90	8.4
130540	(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	26/04/2019 09:00	415	2	8.3	3574	105	8.4
130540	(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	17/07/2019 10:00	12	>6	24.8	3187	82	8.1
130550	(130550) Broadmeadow, Barrack Bridge - Surface Sample (BM140)	03/04/2019 11:25	1100	3	4.6	2167	102	8.2
130550	(130550) Broadmeadow, Barrack Bridge - Surface Sample (BM140)	17/07/2019 10:10	<10	>6	32	3791	82	8.1

Sampling Point Description	Sampled Date	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Temperature °C	TON µg/l as N	otal Nitrogen Salin µg/l as N
meadow, Balheary Bridge, confluence of Broadmeadow and Ward Rivers - Surface	03/04/2019 10:52	1.9	27	0.1	7.4	4214	4426
meadow, Balheary Bridge, confluence of Broadmeadow and Ward Rivers - Surface	17/07/2019 09:10	1.9	172	0.1	18.6	2477	2761
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	03/04/2019 11:10	9.3	97	14.8	8.1	1519	8833
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	11/04/2019 11:20	5.6		4	9.1	1194	11262
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	26/04/2019 09:00	3.7	43	5.5	12.7	3159	3598
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	17/07/2019 10:00	4	98	32.4	20.6	3175	3532
(130550) Broadmeadow, Barrack Bridge - Surface Sample (BM140)	03/04/2019 11:25	4.9	12	22.6	8.1	1067	2587
(130550) Broadmeadow, Barrack Bridge - Surface Sample (BM140)	17/07/2019 10:10	4.9	<10	31.6	19.9	3791	3912

Samples Taken During the Period: **01/01/2019 - 31/12/2019**

ıty Council **Ambient Monitoring 2019**

Sampling Point Description	Sampled Date	Total Phosphorus µg/l as P
meadow, Balheary Bridge, confluence of Broadmeadow and Ward Rivers - Surface	03/04/2019 10:52	51.9
meadow, Balheary Bridge, confluence of Broadmeadow and Ward Rivers - Surface	17/07/2019 09:10	144
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	03/04/2019 11:10	172
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	11/04/2019 11:20	
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	26/04/2019 09:00	82.8
(130540) Broadmeadow, Seatown East - Surface Sample (BM130)	17/07/2019 10:00	169
(130550) Broadmeadow, Barrack Bridge - Surface Sample (BM140)	03/04/2019 11:25	103
(130550) Broadmeadow, Barrack Bridge - Surface Sample (BM140)	17/07/2019 10:10	179

Shore Monitoring

Donabate, Balcarrick Beach

Date	E. coli	Enterococci	Water Quality Status
	MPN/100ml	CFU/100ml	
28/05/2019 08:15	<10	<1	Excellent
11/06/2019 07:20	<10	1	Excellent
17/06/2019 09:00	<10	8	Excellent
01/07/2019 11:40	10	4	Excellent
15/07/2019 09:52	<10	<1	Excellent
29/07/2019 08:50	<10	1	Excellent
12/08/2019 09:30	10	6	Excellent
26/08/2019 09:05	<10	<1	Excellent
09/09/2019 09:10	10	30	Excellent

In order to assess these results, the Bathing Water Quality Regulations, 2008 (S.I No 79 of 2008), were consulted. It was found that, Donabate, Balcarrick Beach, achieved "*Excellent*" results in all cases for the Bathing Water season 2019.

Donabate, Balcarrick Beach was classified as achieving Sufficient Water Quality in 2018 based on the assessment of bacteriological results for the period 2015 to 2018. During this period the Water Quality ratings were as follows:

2015 Excellent Water Quality
2016 Good Water Quality
2017 Sufficient Water Quality
2018 Excellent Water Quality

Malahide Beach

Date	E. coli	Enterococci	Water Quality Status
	MPN/100ml	CFU/100ml	
28/05/2019 07:45	<10	4	Excellent
11/06/2019 06:50	<10	<1	Excellent
17/06/2019 07:25	20	6	Excellent
01/07/2019 11:05	41	13	Excellent
15/07/2019 09:16	<10	<1	Excellent
29/07/2019 08:20	<10	12	Excellent
12/08/2019 08:59	160	23	Excellent
26/08/2019 08:21	31	1	Excellent
09/09/2019 08:35	85	24	Excellent

Although Malahide Beach is no longer classified as a bathing water, it is still monitored during the bathing season. All samples taken during 2019 achieved "Excellent" status.