Annual Environmental Report

2021

Ringsend

D0034-01

CONTENTS

7 APPENDIX

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0034-01, Ringsend, 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.

The Greater Dublin Area Agglomeration comprises the geographical area of Dublin City Council and sections of the functional areas of:

- Fingal County Council
- South Dublin County Council
- Dun Laoghaire Rathdown County Council
- Meath County Council

1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

1.2 TREATMENT SUMMARY

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

- Ringsend WWTP with a Plant Capacity PE of 1640000, 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
TPEFF0700D0034SW001	Ringsend WWTP	Treated	Non-Compliant	BOD, 5 days with Inhibition (Carbonaceous mg/l COD-Cr mg/l Suspended Solids mg/l Total Nitrogen mg/l Total Phosphorus (as P) mg/l E.coli

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report	Included in AER
Priority Substances Assessment	Yes - **Appendix 7.2**
Toxicity/Leachate Management Report	Yes - **Appendix 7.3**
Final Effluent Toxicity Assessment	Yes - **Appendix 7.4**

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 RINGSEND WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - RINGSEND 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) mg/l	143	384	253
COD-Cr mg/l	246	1149	533
Suspended Solids mg/l	245	645	243
Total Nitrogen mg/l	100	64	39
Total Phosphorus (as P) mg/l	100	12	5
Hydraulic Capacity	N/A	864,774	430,893

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 - TPEFF0700D0034SW001

	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Total N (mg/l)	pH	Toxicity (TU)	Comment
WWDL ELV (*Schedule A*)	25	125	35	1	10	6-9	5	
ELV with Condition 2 Interpretation included	50	250	87.5	1.2	12.0	-	-	
Number of sample results	143 **	247***	247***	100 *	100 *	247***	1	Composite samples taken except for toxicity
Number of sample results above WWDL ELV	68	71	169	100	91	0	0	
Number of sample results above ELV with Condition 2 Interpretation included	25	27	49	100	83	0	0	
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Overall Compliance (Pass/Fail)	Fail	Fail	Fail	Fail	Fail	Pass	Pass	

**96-110 samples therefore 9 non-compliant results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.*
***126-140 samples therefore 11 non-compliant results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.*
****220-235 samples therefore 17 non-compliant results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.*

Table 2.1.2 *continued* - Effluent Monitoring Summary – RINGSEND WWTP 2021

	DIN (mg/l N)	Ammonia (mg/l N)	Ortho-Phosphate (mg/l P)	OFG (mg/l)	E.coli (MPN/100ml)	Enterococci (CFU/100 ml)	Colour (Hazen)	Comment
WWDL ELV (*Schedule A*)	-	-	-	-	100,000	-	-	
ELV with Condition 2 Interpretation included	-	-	-	-	120,000	-	-	
Number of sample results	247	247	247	102	57* (SPOT)	47* (SPOT)	247	*Licence specifies 1st May to 31st August for E. Coli compliance
Number of sample results above WWDL ELV/not achieving min % reduction	-	-	-	-	2	-	-	Composite sample taken for chemistry parameters
Number of sample results above ELV with Condition 2 Interpretation included	-	-	-	-	2	-	-	
Annual Mean (for parameters where a mean ELV applies)								
Overall Compliance (Pass/Fail)	N/A	N/A	N/A	N/A	Fail**	N/A	N/A	** 2 samples exceeded 120,000 MPN/100ml during the specified period (01/05/21 - 31/08/21) on 29/06/21 and 20/07/21.

Cause of Exceedance(s):

The non-compliances were due to capacity issues and ongoing works at the WWTP.

Significance of Results:

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 68 samples non-compliant with the ELV in relation to cBOD. The non-compliance is due to overloading. There were 71 samples non-compliant with the ELV in relation to COD. The non-compliance is due to overloading. There were 169 samples non-compliant with the ELV in relation to TSS. The non-compliance is due to overloading. There were 100 samples non-compliant with the ELV for TP. The non-compliance was due to no P removal treatment on site. There were 91 samples non-compliant with the ELV for TN. The non-compliance was due to overloading. The WWTP effluent was compliant with the pH and Toxicity ELVs set in the wastewater discharge licence. The WWTP was non-compliant with the ELV set in the wastewater discharge licence for Faecal Coliforms (E. Coli) monitored during the specified period 01/05/20 to 31/08/20 (2 breaches). The two breaches of the Condition 2 ELV occurred on the 29/06/2021 (241,960 MPN/100ml) and the 20/07/2021 (198,630 MPN/100 ml).

The impact on receiving waters is assessed further in Section 2.3.

Discounting of Results :

There was no reported discounting of results in 2021 due to Poor Weather Conditions (CAW).

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0700D0034SW001

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*	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Upstream monitoring point	***Liffey U/S Islandbridge***	Unknown	No	No	No	No	Moderate	The River Liffey U/S Islandbridge is freshwater and cannot be impacted by estuarine receiving waters.
Downstream monitoring points	***Liffey Estuary Upper***	Unknown	No	No	No	No	Good	Yes Impacts in the near field and the plume of the sewage discharge – See **Section 2.1.3.1** below. Liffey Estuary tidal
Downstream monitoring points	***Liffey Estuary Lower***	Unknown	No	No	No	No	Good	Yes Impacts in the near field and the plume of the sewage discharge – See **Section 2.1.3.1** below. Liffey Estuary tidal
Downstream monitoring points	***Tolka Estuary***	Unknown	No	No	No	No	Moderate	Yes Impacts of the sewage discharge plume and the Tolka River inflow – See **Section 2.1.3.1** below.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	*Irish Grid Reference*	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Downstream monitoring points	***Dublin Bay***	Unknown	No	No	No	No	Good	Occasional elevated DIN concentrations. See **Section 2.1.3.1** below.
Downstream monitoring points	Designated Bathing Waters Dollymount Bathing Zone Sandymount	Unknown	**Yes**	No	No	No	**2021 EPA Predicted** **Good** **Sufficient**	See **Section 2.1.3.1** below.

The results for the upstream and downstream ambient monitoring are included in **Appendix 7.1**.

2.1.3.1 AMBIENT MONITORING PARAMETER SUMMARY-RINGSEND WWTP

The results for ambient results and additional monitoring data sets are included in the **Appendix 7.1 - Ambient Monitoring Summary**.

Significance of Results:

- The Ringsend WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in **Section 2.1.2**.
- The primary discharge from the wastewater treatment plant does have an observable negative impact on the water quality in the near field of the discharge and in the Liffey and Tolka Estuaries.
- The primary discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status in the Liffey Estuary and Dublin Bay. The DIN limit for Dublin Bay has been exceeded on occasion at 4 locations in 2021.
- Other potential causes of deterioration in water quality relevant to this area are upstream riverine pollutants, combined sewer overflows, exfiltration from sewers and misconnections to surface water sewers in the large urban agglomeration.

Licence D0034-01 requires monitoring and assessment of the impacts of the Ringsend effluent discharge on receiving water quality at agreed sampling locations as follows :

- 9 Ambient Surface Waters **(ASW2 – ASW10)** covering sampling points in the lower Liffey Estuary in the near field of the discharge **(ASW2 to ASW5)**, and points on the River Liffey and River Tolka **(ASW6 to ASW10 - Surface and Depth samples)**
- 11 additional monitoring points on the Liffey and Tolka Estuaries **(DB 020 to DB 420 – Surface, Depth and Composite samples)**
- 9 monitoring locations in Dublin Bay **(DB 430 to DB 610 – Surface, Depth and Composite samples)**
- 8 shoreline locations, 2 of which are EC designated bathing waters - Dollymount Bathing Zone and Sandymount **(ASW 11 to ASW 18)**

See map of monitoring locations agreed with the EPA in **Appendix 7.1.1**.

See all monitoring data for 2021 in **Appendix 7.1**.

The Liffey Estuary from Islandbridge Weir to the Poolbeg Lighthouse including the River Tolka Basin and the South Bull Lagoon is designated as a *"sensitive area*" by Part 2, Schedule 3, of the Urban Wastewater Regulations, SI 254 of 2001. S.I. .No. 272 of 2009 (as amended) / S.I. No. 77 of 2019, set physico-chemical standards for High and Good status in transitional and coastal water bodies to be complied with outside the allocated mixing zone of a licensed discharge.

The Rivers Liffey and Tolka and their estuaries are classified under the Water Framework Directive as Transitional Water Bodies. The outer estuary / Dublin Bay is classified as a Coastal Water Body.

The parameter suite set in the marine monitoring section of the licence was tested in all samples (Temperature / Dissolved Oxygen / BOD / Salinity / Dissolved Inorganic Nitrogen / Total Oxidised Nitrogen / Molybdate Reactive Phosphate / Ammonia / Silica / Chlorophyll).

Tidal Conditions during the 6 monthly estuarine surveys in **2021** are tabulated below:

Survey No. and Month 2021	Date	High Tide Time	Height (m OD)	Low Tide Time	Height (m OD)	Tidal Status during Survey
1. April	07/04/21	09.13	3.52	15.18	1.04	High to Ebb
2. May	06/05/21	08.45	3.58	14.47	1.01	High to Ebb
3. June	24/06/21	11.55	4.09	17.38	0.53	Mid Flow to Mid-Ebb
4. July	22/07/21	10.55	3.87	16.41	0.85	High to Ebb
5. August	19/08/21	09.51	3.63	15.37	1.19	High to Mid-Ebb
6. September	16/09/21	08.35	3.46	14.18	1.47	High to Ebb

2.1.3.1.1 Marine Monitoring Summary – ASW2 to ASW10

A total of 6 surveys were carried out in the Liffey and Tolka Estuaries during 2021 at the designated locations in the licence, tabulated below:

EPA Map Code	Licence Code	Sampling Point
		Liffey Estuary Lower
	ASW2	25 metres North of Poolbeg Wall
	ASW3	50 metres North of Poolbeg Wall
	ASW4	75 metres North of Poolbeg Wall
	ASW5	100 metres North of Poolbeg Wall
		Liffey
DB000	**ASW6**	Liffey City, Downstream Islandbridge Weir
DB010	**ASW7**	Liffey City, Heuston Station, Upstream of Camac Outfall
	ASW8	Liffey City, Winetavern Street Bridge
		Liffey Estuary Lower
DB210	**ASW9**	Liffey (Surface), Downstream of East Link Toll Bridge
		Tolka
DB310	**ASW10**	Tolka, Downstream of Annesley Bridge

A summary of transitional water quality compliance with S.I. .No. 272 of 2009 (as amended) / S.I. No. 77 of 2019 for the above locations is presented below and complete water quality data is presented in **Appendix 7.1.2**.

This shows compliance with Temperature, Dissolved Oxygen (lower) and Dissolved Oxygen (upper) at all locations on all survey dates.

BOD values were compliant with transitional water quality at all locations and on all dates except for:

ASW 2S – on 07/04/21 (BOD = 5 mg/l) and on 06/05/21 (BOD = 7mg/l)
ASW 3S - on 06/05/21 (BOD = 6 mg/l)
ASW 10S – on 19/08/21 (BOD = > 7 mg/l)

Median Chlorophyll values were compliant with transitional water quality at all locations except for:

ASW 8S – (9.8 mg/m^3)
ASW 10S – (5.25 mg/m^3)

Dissolved Oxygen values were compliant at all locations except for:

ASW 10S - on 24//06/21 (DO = 79% Sat.) and on 16/09/21 (DO = 74% Sat).

Exceedances of median Molybdate Reactive Phosphate (MRP) standards occurred in the near field of the Ringsend discharge at ASW2, ASW3 and at ASW 10S (surface samples).

The non-compliant median MRP results were as follows :

Location	MRP 2021 Median Result	SI .No. 272 of 2009 (as amended) / S.I. No. 77 of 2019 Standard	Comment
		60 ug/l as P (median) at 0-17% PSU to 40 ug/l as P (median) at 35% PSU	
ASW2 (Surface)	270 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW3 (Surface)	213.5 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW10 (Surface)	62.5 ug/l as P		Outside the Mixing Zone Upstream River Pollution

2.1.3.1.2 Marine Monitoring – 2021 - Transitional Water Monitoring – Points Agreed with the EPA (DB 020 to DB 420)

A total of 6 surveys were carried out in the Liffey and Tolka Estuaries during 2021, at 11 locations agreed with the EPA, tabulated below:

EPA Map Code	Sampling Point
	Liffey Estuary Upper
DB 020	Matt Talbot Bridge
	Liffey Estuary Lower
DB 120	Dodder / Grand Canal Basin
DB 210	East Link Toll Bridge
DB 220	RO RO Ramp No.5 (Old Treatment Works Outfall)
DB 410	Ringsend Cascade
DB 420	Poolbeg Lighthouse
	Tolka
DB 300	Upstream of Drumcondra Bridge
	Tolka Estuary
DB 320	East Point Business Park Bridge
DB 330	Castle Avenue
DB 340	Clontarf Boat Club
DB 350	South Lagoon at Bull Wall Wooden Bridge

A summary of transitional water quality compliance with S.I. No. 272 of 2009 (as amended) / S.I. No. 77 of 2019 for the above locations is presented below and the complete water quality data is presented in **Appendix 7.1.3**.

These surveys showed full compliance with BOD, Temperature, Dissolved Oxygen (upper and lower) and median Reactive Phosphorus at all locations, on all survey dates except those detailed below.

BOD Saline results exceeded the limit of 4 mg/l O_2 at :

DB 300 (Surface) on 19/08/21 **(>7 mg/l).**

DB 320 (Surface) on 22/07/21 **(6 mg/l**), 19/08/21 **(6 mg/l)** and 16/09/21 **(>6 mg/l).**
DB 320 (Depth) on 22/07/21 **(>7 mg/l)** and 16/09/21 **(>6 mg/l)**

DB 320 is subject to upstream riverine pollution and may on occasion be subject to the Ringsend WWTP discharge plume.

DB 330 (Composite) on 22/07/21 **(5 mg/l)**

Molybdate Reactive Phosphate (MRP) median exceedances occurred at locations as follow:

Location	MRP 2021 Median Result	S.I. No. 272 of 2009 (as amended) / S.I. No. 77 of 2019	Comment
	Liffey Estuary	< 40ug/l P(med) < 60 ug/l P (med)	
DB020 (Depth)	**52 ug/l P**		SW1 Discharge and riverine impacts
DB410 (Surface)	**97 ug/l P**		SW1 Discharge
DB420 (Composite)	**66 ug/l P**		SW1 Discharge and riverine impacts
	Tolka Estuary		
DB320 (Surface)	**102 ug/l P**		SW1 Discharge and riverine impacts
DB320 (Depth)	**82.5 ug/l P**		SW1 Discharge and riverine impacts
DB330 (Surface)	**76 ug/l P**		SW1 Discharge and riverine impacts
DB330 (Depth)	**80 ug/l P**		SW1 Discharge and riverine impacts
DB350 (Composite)	**47.5 ug/l P**		SW1 Discharge and riverine impacts

2.1.3.1.3 Marine Monitoring – Dublin Bay, 2021 - Points Agreed with the EPA

A total of 4 surveys were carried out at 9 locations in Dublin Bay during 2021. These locations – 6 coastal waters and 3 Irish Sea locations (*), as agreed with the EPA, are tabulated below:

See map in **Appendix 7.1.1**. All monitoring data is included in **Appendix 7.1.4**.

EPA Map Code	Coastal Water Sampling Points
	Dublin Bay
DB 610	Off Bailey Lighthouse, Howth
DB 430	1 km. NE Poolbeg Lighthouse
DB 450	South Bull Buoy, 1 km. SE Poolbeg Lighthouse
DB 510*	2.5 km. ENE Poolbeg Lighthouse
DB 540*	2.5 km. SSE Poolbeg Lighthouse
DB 550	No.4 Buoy, 2.5 km. E of S Poolbeg Lighthouse
DB 560	Drumleck Point, Howth, 5 km. ENE Poolbeg Lighthouse
DB 570*	5 km. ESE Poolbeg Lighthouse
DB 580	Dun Laoghaire, 5 km. E of S Poolbeg Lighthouse

These locations were sampled at surface (S) and depth (D) only when the Salinity varied on the recommendation of the EPA. Composite samples (C) were taken at all other times.

A summary of coastal water quality compliance with S.I .No. 272 of 2009 (as amended) / S.I. No. 77 of 2019 for the above locations is presented below and complete water quality data is presented in **Appendix 7.1.4.**

Monitoring data for 2021 shows full compliance with Temperature, Dissolved Oxygen (lower) and Dissolved Oxygen (upper).

The median Chlorophyll Good to Moderate limit (cold acetone extraction < 5.0 ug/l) was complied with at all 9 sampling locations in 2021.

The Dissolved Inorganic Nitrogen (DIN) standards for coastal waters (High Status) were complied with at 5 of the sampling locations on all survey dates.

DIN exceedances occurred at 4 locations as follows :

DB 430 - DIN concentration (503 ug/l) in Composite Sample taken on 18/08/21.
DB 510 - DIN concentration (371 ug/l) in Composite Sample taken on 18/08/21.
DB 560 - DIN concentration (1718 ug/l) in Composite Sample taken on 18/08/21.
DB 570* - DIN concentration (1602 ug/l) in Composite Sample taken on 18/08/21.

There were **no other impacts** on regulated coastal and Irish Sea water quality during 2021.

2.1.3.1.4 Shoreline Monitoring – 2021 Bathing Season

Bathing Water is currently regulated by the Bathing Water Quality Regulations, 2008 (S.I. No.79 of 2008) and Bathing Water Quality (Amendment) Regulations 2011 (S.I. No. 351 of 2011).

Shoreline sampling was carried out at 8 locations during the 2021 bathing season :

- ASW 11 - Dollymount North,
- **ASW 12 - Dollymount Bathing Zone***
- ASW 13 - Dollymount South
- ASW 14 - Bull Wall Wood Causeway
- ASW 15 - Poolbeg Outfall (Main)**
- ASW 16 - Half Moon Club Southside
- **ASW 17 – Sandymount Strand***
- ASW 18 – Merrion Strand (All season bathing restriction in 2020 due to POOR status between 2016-2019)

**Note that Point ASW 15 -Poolbeg Outfall - is not a bathing area and is monitored to check the impact of the Ringsend discharge plume.

A summary of bathing water quality compliance for the above locations, three of which are **designated*** is presented below and complete water quality data is presented in **Appendix 7.1.5.**

In Summary:

Bathing water status is determined by the EPA for the year 2021. The status at the different designated locations is also available on the EPA website (www.beaches.ie).

Note the widespread occurrences of Ectocarpus at ASW 11, 12, 13 (the 3 Dollymount sampling locations). Also note the widespread occurrences of Ectocarpus at ASW 17 (Sandymount Strand) and ASW 18 (Merrion Strand) with occasional occurrences at ASW14 (Bull Wall) and ASW 16 (Half Moon).

Designated bathing water at Dollymount (Bathing Zone) will be allocated **GOOD status** in 2021 (predictive)
Designated bathing waters at Sandymount will be allocated **SUFFICIENT status** in 2021 (predictive).

Site Location	ASW 12	ASW 17
No. of samples	19	19
2021 Annual Status (predicted)	Good	Sufficient

The remaining 6 locations monitored are not designated bathing waters.

Monitoring data for non-designated bathing waters between 08/06/21 and 15/09/21 is included in **Appendix 7.1.5.**

2021 - Non-Designated Bathing Waters: Single Sample Status Assessment Criteria

Parameter	Excellent	Good	Sufficient	Poor
IE (Intestinal Enterococci) cfu/100ml	≤100	101-200	201-250	>250
EC (E.coli) cfu (mpn)/100ml	≤250	251-500	501-1000	>1000

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - RINGSEND WWTP

2.1.4.1 Treatment Efficiency Report - Ringsend 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)
cBOD	40,933,118	5,545,951	86
COD	84,487,889	22,168,185	74
SS	38,507,165	1,2281,231	68
TN	6,407,843	3,339,141	48
TP	834,654	678,633	19

2.1.4.2 Treatment Capacity Report Summary - Ringsend 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.

Ringsend WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	959,040
DWF to the Treatment Plant (m^3/day)	397,440
Current Hydraulic Loading - annual max (m^3/day)	864,774
Average Hydraulic loading to the Treatment Plant (m^3/day)	430,893
Organic Capacity (PE) - As Constructed	1,640,000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	2,231,358
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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.

SLUDGE / OTHER INPUTS - RINGSEND WWTP

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

Input type	Quantity	Unit	P.E.**	% of PE 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*	199	m^3/yr	2.42 PE/day from Volume	<0.0001 % (PE)	Yes	Yes	Yes
Industrial / Commercial Sludge	19,711	m^3/yr	240 PE/day from Volume	0.0129 % (PE)	Yes	Yes	Yes
Landfill Leachate (delivered by tanker) – Ballynagran Landfill – Wicklow County Council	15,507	m^3/yr	189 PE/day from Volume	0.0102 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Kerdiffstown Landfill – Kildare County Council	14,056	m^3/yr	171 PE/day from Volume	0.0092 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Knockharley Landfill – Meath County Council	4,158	m^3/yr	51 PE/day from Volume	0.0027 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes

Input type	Quantity	Unit	P.E.**	% of PE 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 tanker) – Drehid Landfill Bord Na Mona Wicklow County Council	5,001.6	m^3/yr	61 PE/day from Volume	0.0033 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes

*Domestic Tankers include only loads from residential/domestic sources and excludes loads from construction sites / offices / nursing homes / army barracks.
** PE = m^3/year /0.225 x365
*** % PE Load to WWTP = Daily Leachate PE/ Mean Daily Influent PE X100 (*Mean Daily Influent 1,859,465*)

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

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

Dublin City Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
6	Discharge to Waters	0	6

South Dublin County Council Functional Area

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Discharge to Waters	0	1

Fingal County Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
3	Discharge to Waters	0	3

Dún Laoghaire Rathdown County Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Discharge to Waters	0	1

Meath County Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
0	Discharge to Waters	0	0

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 maintenance at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Network Infrastructure	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Abatement Equipment offline	Other	1	No	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No
Spillage	Blocked Sewer	1	No	Yes
Spillage	Adverse Weather	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Adverse Weather	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Trigger Level Reached	WWTP operating above capacity	1	No	Yes
Trigger Level Reached	WWTP operating above capacity	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	Yes	No
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	Network Infrastructure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	SWO Design not meeting DoEHLG Criteria	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	SWO Design not meeting DoEHLG Criteria	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	Yes	Yes
Uncontrolled release	Blocked Sewer	1	Yes	No
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Network Infrastructure	1	No	No
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	No
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Blocked Sewer	1	No	No
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Inadequate Infrastructure	1	No	No
Uncontrolled release	Broken Sewer Pipe	1	No	No
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Inadequate Infrastructure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	79
Number of Incidents reported to the EPA via EDEN in 2021	79
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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CS0167DCC	317858, 231360	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CS01DCC	314768, 234217	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CS02DCC	314661, 234250	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CS049DCC	313784, 234372	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CS082	317299, 235411	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO100DCC	313421, 232721	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO101DCC	319921, 230594	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO106DCC	319384, 231534	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO10DCC	313520, 233817	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO11DCC	316105, 234412	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO12DCC	316024, 234384	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO13DCC	314900, 234184	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO14DCC	316859, 234353	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO15DCC	312961, 234299	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO168DCC	318139, 233413	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO169DCC	318143, 233378	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO16DCC	312963, 234299	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO170DCC	317699, 231474	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO171DCC	317550, 232447	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO173DCC	317849, 231357	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO174DCC	317852, 231363	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO175DCC	317743, 231303	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO176DCC	317639, 232519	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO177DCC	314575, 231744	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO178DCC	314571, 231742	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO179DCC	318112, 233464	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO180DCC / NotApplicable_22	318090, 232881	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO181DCC	315892, 232164	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO182DCC	314820, 232377	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO183DCC	316679, 230062	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO184DCC	317824, 232486	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO185DCC	316609, 232018	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO186DCC	317881, 232505	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO187DCC	316306, 230383	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO188DCC	314451, 230170	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO18DCC	316949, 236161	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO190DCC	317162, 230641	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO197DCC	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO19DCC	316949, 236161	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO20DCC	313520, 233817	Yes	Medium	Not Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO21DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO23DCC	316113, 234458	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO24DCC	314413, 234303	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO25DCC	314583, 234276	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO27DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO28DCC	313355, 233720	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO29DCC	315432, 234237	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO31DCC	315902, 236814	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO33DCC	317179, 234428	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO34DCC	317179, 234428	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO35DCC	317026, 234337	Yes	High	Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO36	317234, 234294	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO37DCC	312064, 233584	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
CSO38DCC	312691, 234330	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO3DCC	315866, 234360	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO40DCC	309745, 234944	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO41DCC	314987, 234140	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO43DCC	313368, 233724	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO44DCC	316949, 236161	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
CSO45DCC	315554, 234257	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO46DCC	315723, 234302	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO47DCC	315279, 234193	Yes	High	Not Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO48DCC	315554, 234208	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO4DCC	317062, 236049	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO50DCC	315554, 234208	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO50DCC	317992, 233868	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO51DCC	315554, 234208	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO53DCC	309745, 234944	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO54DCC	312990, 233664	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
CSO56DCC	313023, 233673	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
CSO58DCC	313061, 233674	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
CSO59DCC	314244, 234312	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO60DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO61DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO62DCC	317392, 234297	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO65DCC	313737, 234202	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
CSO66DCC	313785, 234372	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO67DCC	310369, 234145	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO68DCC	310276, 234429	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO69DCC	310802, 234027	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO6DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO70DCC	310260, 234248	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO71DCC	310501, 234093	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO72DCC	312634, 233620	Yes	High	Not Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO73DCC	318619, 235576	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO74DCC	312548, 233666	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO76DCC	TBC, TBC	Yes	Unknown	Meeting	Unknown	Unknown	Not Monitored
CSO77DCC	314493, 234257	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO78DCC	314688, 234206	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO79DCC	314332, 234279	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO7DCC	315554, 234208	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
CSO80DCC	314205, 234283	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO83DCC	313948, 234326	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO84DCC	315143, 234129	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
CSO85DCC	315143, 234129	Yes	High	Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO87DCC	316865, 234654	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO88DCC	317775, 234381	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO89DCC	317775, 234381	Yes	High	Meeting	Unknown	Unknown	Not Monitored
CSO8DCC	316176, 236728	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
CSO90DCC	311589, 231731	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO91DCC	311398, 230549	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO92DCC	313440, 232441	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO93DCC	319319, 231456	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO94DCC	310338, 232484	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO95DCC	318880, 233947	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO97DCC	319365, 230619	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
CSO98DCC	319362, 230612	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO9DCC	316056, 236694	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
DLRCC B4 4 004D	319938, 230443	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B4 R 001D	321290, 229580	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B4 R 005DL	324033, 229855	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
DLRCC B4 R 008D	327236, 226598	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 4 020D	321568, 229551	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 001D	323352, 228938	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 005	316697, 230047	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
DLRCC B5 R 007D	314831, 229661	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 010D	316969, 229569	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
DLRCC B5 R 011D	316989, 229389	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 017D	320901, 229956	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 018D	321284, 229508	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 019D	321297, 229506	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 021D	323002, 226303	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 025D	321793, 229409	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC B5 R 026D	323352, 228938	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
DLRCC/B5/R/004	319857, 230074	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
Fingal- SW53	309614, 238262	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
Fingal-SW50	306076, 243269	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
Fingal-SW51	308619, 238545	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
Fingal-SW52	308308, 238767	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
Fingal-SW54	307991, 238729	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
Fingal-SW55	308950, 237336	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
Fingal-SW56	306505, 237441	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312547.8, 233666.5	No	Medium	Not Meeting	Unknown	Unknown	Not Monitored
TBC	313355, 233720	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	313355, 233720	No	High	Not Meeting	Unknown	Unknown	Not Monitored
TBC	317236, 234315	No	High	Not Meeting	Unknown	Unknown	Not Monitored
TBC	318619.2, 235575.7	No	High	Not Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	318619.2, 235575.7	No	High	Not Meeting	Unknown	Unknown	Not Monitored
TBC	310275.6, 234428.6	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	314332, 234279	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	316855.4, 234457.5	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	317364, 235905	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	309007, 234984	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	317775, 234381	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	317553, 234404	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	312976, 234346	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	310802, 234027	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	High	Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	309277, 228129	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	311471, 227363	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	311471, 227363	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	314155, 228976	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315427, 229531	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315555, 229630	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	316989, 229389	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312242, 229797	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318389., 229639	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312689, 234345	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	314332, 234279	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	310741, 232270	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313403, 232803	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317325, 233389	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318249, 230834	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317766, 231213	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	328391, 239452	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323087, 239136	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320441, 237735	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323541, 242485	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317072, 240689	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	322843, 238113	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323155, 238450	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	322130, 239548	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323952, 241538	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	324671, 240385	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	328711, 239308	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319347, 237236	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319092, 237194	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319051, 237218	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317288, 237032	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312837, 239706	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	314678, 237505	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315291, 237280	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	316191, 236748	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317482, 236223	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317339, 236668	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	3172745, 236972	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315674, 237839	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317527, 236397	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313188, 241541	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	317840, 236426	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319115, 235885	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	321003, 236217	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320292, 236509	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317069, 240694	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317083.4, 240679	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320092, 235761	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	327805, 239454	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	323228, 239139	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319535, 239913	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318032, 236337	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	326299, 238441	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	326279, 238441	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318162, 241489	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	316297, 237050	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315933, 237459	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318903, 237248	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323839, 243155	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	32230, 241250	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323156, 238449	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313240, 238954	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319900, 235823	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315392, 237217	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315978, 236911	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317476, 236267	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313415, 238521	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317564, 236640	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319927, 235869	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320097, 235761	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	321116, 237636	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313755, 237700	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323624, 238690	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	324824, 239198	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	324387, 239355	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312746, 239249	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	313201, 236289	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313840, 237484	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313170, 238854	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	324838, 244371	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313270, 238784	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313415, 238521	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313685, 238438	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313685, 238438	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	325886, 239468	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317527, 236397	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	314692, 238454	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	314216, 238253	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	314692, 238454	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	315371, 237860	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	316652, 238118	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	317414, 238590	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318559, 237699	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319906, 235824	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	321003, 236217	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320166, 237863	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320812, 238462	No	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	327228, 226664	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	326942, 226990	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	325269, 228005	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	325187, 228053	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320901.082, 229956.066	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319767, 230085	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	324957, 228322	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS01	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
SDCCPS02	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS03	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS04	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS05	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS06	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS07	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS08	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS09	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS10	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS13	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS14	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
SDCCPS15	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS16	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS17	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS19	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCPS21	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS22	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCSN01	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCSWO01	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCSWO05	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCSWO05A	307108, 231571	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCSWO06	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
SDCCSWO08	307301, 231708	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCSWO09	TBC, TBC	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SDCCSWO10	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW004	312639, 228184	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW096	313774, 232636	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW099	313291, 229848	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW103	317860, 232456	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
SW107	318741, 232076	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW173	316956, 230477	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW2	320332, 233800	Yes	Unknown	Not yet Assessed	20	1627372	Monitored
SW201	313218, 233704	Yes	High	Not Meeting	Unknown	Unknown	Not 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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
SW233	309737, 229575	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW260	317562, 230767	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW269	316941, 229707	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW277	321297, 229506	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW289	321566, 243257	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW3	306100, 252760	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW315	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW4	305906, 252236	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SW5	302637, 251605	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW6	303221, 251534	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW7	306663, 245815	Yes	Unknown	Not yet Assessed	Unknown	Unknown	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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
SW8	306385, 246297	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	321003, 236217	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	321184, 236124	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	321437, 236402	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	321423, 236404	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	321138, 238300	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	317561, 230765	Yes	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	326343, 227776	Yes	Unknown	Not yet Assessed	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^3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	No
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes, where applicable
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.

4.2.1a Specified Improvement Programme Summary - Dublin City Council Functional Area:

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

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Upgrade waste water treatment plant and ancillary works in accordance with Condition 5.5	C.1	22nd December 2015	Yes	Part-commenced	The project comprises four key elements and underpinning these is a substantial programme of ancillary works: • Provision of additional secondary treatment facility capacity with nutrient reduction (400,000 population equivalent). • Upgrade of the 24 existing secondary treatment tanks to provide additional capacity and nutrient reduction, which is essential	The overall Upgrade Project works are expected to take until 2025 to complete. The timeline for the production of effluent in line with the parameters set out in the UWWTD is now expected in Q4 2023, subject to the ongoing effects of Covid-19, supply chain challenges (Ukraine) and timely procurement and investment approvals, as well as growth of loading in the catchment. It is important to note that this programmed 2023 date is the anticipated date that the plant can start producing an effluent in line with

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
					to protect the nutrient-sensitive Dublin Bay area. • Provision of a new phosphorous recovery process; and • Expansion of the plant's sludge treatment facilities. The 400,000 PE Capacity Upgrade Design Build (DB) contract commenced in 2018. These works progressed through the testing and commissioning stages and were completed in Q4 2021. An Bord Pleanála granted planning permission for the further upgrade of the plant was granted on 24th April 2019, consenting for the works required to facilitate the use of the AGS technology in the existing treatment tanks and to omit construction of the Long Sea Outfall Tunnel. Works on the first of four contracts to retrofit the existing secondary treatment tanks with Aerobic Granular Sludge (AGS) technology commenced in November 2020. The second	the parameters set out in the UWWTD and the actual confirmed UWWTD compliance determination will be up to 12 months from that date (on attaining 12 months compliance with the UWWTD ELVs).

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
					contract was awarded in Q3 2021. The third contract was awarded in Q4 2021, and fourth contract is scheduled to commence in Q1 2024. All 4 contracts will bring the plant capacity to 2.4m PE in 2025. The phosphorus recovery facility works contract commenced in Q1 2021, with completion scheduled for early 2023. Initial upgrades to sludge treatment facilities commenced in 2020 and were completed in Q2 2021. Further elements progressed in 2021 and will continue into 2024. An interim stage in the project is to bring the plant into capability to produce a complaint effluent, based on a load of 2.1m PE, scheduled for the end of 2023.	
Upgrade storm water storage tank at WWTP as necessary	C.1	22nd December 2015	Yes		There are no current plans to upgrade the storm water storage tanks at the Works. This will be reassessed on completion of the drainage areas plans where network is currently being considered under the model solution.	The four drainage area plans under investigation are for the MLPS, Sutton, Dodder Valley and West pier catchments.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
City Centre Sewerage Scheme (CCSS)	C.3	None specified	Not applicable	In progress	Stage 4 completed, with progression on prioritised projects to specimen design. Programme to be determined	
North Docklands Sewerage Scheme	C.3	None specified	Not applicable	Completed	Completed	

4.2.1b Specified Improvement Programme Summary – South Dublin County Council Functional Area:

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
None						

4.2.1c Specified Improvement Programme Summary – Fingal County Council Functional Area:

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Discharge S4 Fingal to the Irish Sea to be discontinued	A.3	31/12/2011	Yes	Proceeding to detailed design.	2024	Detailed design ongoing.

4.2.1d Specified Improvement Programme Summary – Dún Laoghaire Rathdown County Council Functional Area:

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
None						

4.2.1e Specified Improvement Programme Summary – Meath County Council Functional Area:

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
None						

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

4.2.2a Improvement Programme Summary - Dublin City Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
WWTP Upgrade	WWTP Upgrade	WWTP (Condition 5.2)	End 2023 – scheduled completion of interim works to enable the production of a compliant effluent for 2.1m PE. End 2025 – scheduled completion of final works to upgrade WWTP to a capacity of 2.4m PE, As outlined above, it is important to note that this programmed 2023 date is the anticipated date that the plant can start producing an effluent in line with the parameters set out in the UWWTD and the actual confirmed UWWTD compliance determination will be up to 12 months from that date (on attaching 12 months compliance with the UWWTD ELVs).	
Main Lift Pumping Station Catchment DAP -Rathmines & Pembroke -Crumlin/Drimnagh/Bluebell	Survey & Assessment of Wastewater Network		2025	Flow surveys complete and Model Build commenced.
Sutton Pumping Station Catchment DAP -North Fringe -North Dublin Drainage Scheme (NDDS)	Survey & Assessment of Wastewater Network		2026	Surveys currently ongoing. Project delays due to Covid-19 restrictions.
Main Lift Pumping Station Upgrade Works	Upgrade to MLPS (Civil & M&E Works including pumps and panel replacements)		2022	Civil & M&E Works including pumps and panel replacement

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
				complete. Additional Works have been identified to replace the two existing Syphons due for completion Q4 2022.
Wastewater Pumping Station Capital Maintenance Works Programme	Capital Maintenance Works to Multiple Wastewater Pumping Stations		Completed	

4.2.2b Improvement Programme Summary - South Dublin County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Main Lift Pumping Station Catchment DAP -Newcastle/Rathcoole/Saggart -Lucan/Clondalkin	Survey & Assessment of Wastewater Network		2025	Flow surveys complete and Model Build commenced.
Dodder Valley Sewers DAP	Survey & Assessment of Wastewater Network		2023	Asset Surveys complete. Stage 3 assessment due for completion 2023
Newcastle Local Network Reinforcement Project	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	Wastewater catchment plan still ongoing.	Separate alternative Project being progressed to service Newcastle area

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Ballycullen/Oldcourt Network Reinforcement Project	Provision of additional capacity to control reduce flooding risk.	Network Upgrade	2022	Construction works for the new 450mm sewer have commenced. The project is expected to be completed Q4 2022.

4.2.2c Improvement Programme Summary - Fingal County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Sutton Pumping Station Catchment DAP -North Fringe	Survey & Assessment of Wastewater Network		2026	Surveys currently ongoing. Project delays due to Covid-19 restrictions
Blanchardstown Sewerage Scheme Phase 2 Contract 2: Duplication of 9C Sewer & Storage	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	Q3 2023	Ahead of schedule, commenced commissioning with construction near completion
Liffey Siphons Refurbishment	Provision of additional capacity to reduce risk of flooding	Network Upgrade	Completed	
Portmarnock Local Network Reinforcement Project	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	2025	Delay encountered due to An Bord Pleanala (ABP) planning refusal
Kinsealy Local Network Reinforcement Project	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	Completed	

4.2.2d Improvement Programme Summary - Dún Laoghaire Rathdown County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Dun Laoghaire Sewerage Scheme Phase 1	Contract 2e - Moreen Environs Foul Sewer Upgrade, Phase 4 - Removal of deficiencies in capacity	Network Upgrade	Specimen design under way	Project re-commenced being progressed under RC3.
Dun Laoghaire Sewerage Scheme Phase 1	Contract 2 - Network Upgrade Sandyford/ Stillorgan Improvement-Tunnel - Removal of deficiencies in capacity	Storage and Network Upgrade	Specimen design under way.	Project re-commenced being progressed under RC3.
Goatstown Local Network Reinforcement Project	Provision of additional capacity to reduce risk of flooding	Network Upgrade	Completed	
Churchtown/Landscape Rd Network Reinforcement Project	Provision of additional capacity to reduce risk of flooding	Network Upgrade	2023	Contractor has been appointed and site investigations underway. Works at this location are expected to be completed Q1 2023.
West Pier Pumping Station Catchment DAP **- West Pier East** **- West Pier West**	Survey & Assessment of Wastewater Network	Not Applicable	2023	Asset Surveys complete. Stage 3 assessment due for completion 2023

4.2.2e Improvement Programme Summary – Meath County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Seal the leaking cable ducts and other points that flood the wet well sumps	Seal the leaking cable ducts and other points that flood the wet well sumps; a) at Ashbourne PS b) at Kilbride PS	Not Applicable	Completed	Completed

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
A new PLC and radio signal system in Kilbride & Ratoath	A new radio signal system in the Ashbourne, Ratoath and Kilbride pumping stations are undergoing upgrade works which also includes upgrades to the PLC's at Kilbride and Ratoath PS's. This work when complete will provide a robust alarm system for the pumping stations and prevent unauthorised discharges from Kilbride PS.	Not Applicable	Completed	Completed

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.

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	Required in this AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	Yes	Yes	Summary of finding in **Table 5.1**. Full report in **Appendix 7.2**.
Toxicity/Leachate Management	Yes	Yes	Yes	Summary of findings in **Table 5.2**. Full report in **Appendix 7.3**.
Toxicity of Final Effluent Report	Yes	Yes	Yes	Summary of findings in **Table 5.3**. Full report in **Appendix 7.4**

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report is included in **Appendix 7.2** . A summary of the findings of this report is included below.

Priority Substances Assessment	On-going review of licenced discharges to sewers in the catchment of Ringsend WWTP. Priority substances detected in effluent should have no negative impacts outside the near field of the discharge due to dilution. See **Appendix 7.2**.

5.2 TOXICITY/LEACHATE MANAGEMENT

The Toxicity of Toxicity/Leachate Management Repot is included in **Appendix 7.3** . A summary of the findings of this report is included below.

Toxicity/Leachate Management	Annual leachate volume at Ringsend is not significant at 182,216 cubic metres. This constitutes 499 cubic metres per day (0.116 % v/v) based on the 2021 mean daily influent volume of 430,893 cubic metres. See **Appendix 7.3**.

5.3 TOXICITY OF FINAL EFFLUENT

The Toxicity of Final Effluent Report is included in **Appendix 7.4**. A summary of the findings of this report is included below.

Toxicity of Final Effluent Report	Treated effluent complies with the limit set in Licence of 5 TU. See **Appendix 7.4**.

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?	Yes
List reason e.g., additional SWO identified	*Irish Water will be seeking a review of the license in relation to the proposed upgrade of treatment works and network.*
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	Yes
List reason e.g., changes to monitoring requirements	*Upgrade in capacity of waste water treatment works & changes to ambient monitoring requirements.*
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

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

Date: 19/05/2022

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

In the appendix include all the detailed or site-specific reports that are relevant to the AER.

Appendix
Appendix 7.1 - Ambient Monitoring Summary
Appendix 7.2 - Priority Substances Assessment
Appendix 7.3 - Toxicity Leachate Management Report
Appendix 7.4 - Final Effluent Toxicity Assessment
Appendix 7.5 - Met Eireann Orange and Red Alerts affecting Ringsend WWTP

Appendix 7.1 - Ambient Monitoring Summary

Appendix 7.1.1 Dublin Ambient Sampling Points Map

Appendix 7.1.2 Transitional Monitoring Water Quality Data: ASW2 – ASW10

Appendix 7.1.3 Transitional Monitoring - Water Quality Data: Points Agreed by the EPA

Appendix 7.1.4 Coastal Monitoring - Dublin Bay Water Quality Data: Points Agreed by the EPA

Appendix 7.1.5 Coastal Monitoring – Bathing Water Quality Data: ASW11 – ASW18

Appendix 7.1.1 Dublin Ambient Sampling Points Map

Appendix 7.1.2 Transitional Water Body Monitoring 2021 ASW 2 - ASW 10

Report for Samples Taken During the Period: 01/01/2021 - 31/12/2021

Customer	EPA Code	Test List	Sampling Point	Sampling Point Description	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Silica µg/l as SiO2	Temperature °C	TON µg/l as N
				Surface Water Objectives for Transitional Water Bodies SI 272 of 2009				< 4 mg/l (95%-ile)	High - Good 2.5 median Good -Moderate 5.0 median		95%-ile 0%PSU 70%_130% 35% PSU 80% - 120%		0% - 17% PSU <60 ug/l P (median) 35% PSU <40 ug/l P (median)				
				Compliant													
				Non-Compliant													
DCC	ASW 2S	123_ESTUAR	130842	(130842) Liffey Estuary Lower, 25m North of Poolbeg Wall - Surface Sample	07/04/2021 10:00	1821136	5973	5	5	6390	97	<0.1	680	31.37	1204	10.6	417
					06/05/2021 10:00	1831734	4698	7	2	5106	98	0.3	296	33.98	1739	11.1	408
					24/06/2021 10:00	1849545	550	2	2.8	794	100	0.9	70	34.61	998	15.3	244
					22/07/2021 10:00	1860623	136	2	8.3	783	98	3	122	32.78	489	19.2	647
					19/08/2021 09:00	1870743	151	1	1.3	330	99	0.6	103	33.16	443	19.2	179
					16/09/2021 10:38	1881215	607	2	0.3	1614	100	1.5	1173	34.02	1680	18.5	1007
									2.4				**270**				
DCC	ASW 2D	123_ESTUAR	130843	(130843) Liffey Estuary Lower, 25m North of Poolbeg Wall - Depth Sample	07/04/2021 10:00	1821137	284	<1	3.9	577	91	<0.1	55	33.58	937	9.3	293
					06/05/2021 10:00	1831735	131	2	2.5	178	94	1.6	40	34.7	123	9.9	47
					24/06/2021 10:00	1849546	113	<1	2.9	214	94	1	24	35.17	521	15	101
					22/07/2021 10:00	1860624	48	<1	6	96	94	0.6	27	34.75	86	17.4	48
					19/08/2021 09:00	1870744	34	<1	6.9	34	96	4.6	30	34.77	1278	18.5	<40
					16/09/2021 10:39	1881216	98	<1	2.1	178	96	0.9	91	34.56	300	16.9	80
									3.4				**35**				
DCC	ASW 3S	123_ESTUAR	130844	(130844) Liffey Estuary Lower, 50m North of Poolbeg Wall - Surface Sample	07/04/2021 10:00	1821138	3343	3	<0.1	3952	97	4.6	416	32.58	450	10.1	609
					06/05/2021 10:00	1831736	<10	6	1	< 50	99	1.1	40	34.02	<50	10.9	<40
					24/06/2021 10:00	1849547	616	1	2.7	899	100	1.3	109	34.65	927	15.2	283
					22/07/2021 10:00	1860625	745	2	4.4	2098	98	0.7	391	32.52	1635	19.6	1353
					19/08/2021 09:00	1870745	23	1	1.9	100	100	1.1	18	33.21	380	19.3	77
					16/09/2021 10:31	1881217	206	<1	2	581	99	0.8	318	34.05	720	18.3	375
									1.95				**213.5**				
DCC	ASW 3D	123_ESTUAR	130845	(130845) Liffey Estuary Lower, 50m North of Poolbeg Wall - Depth Sample	07/04/2021 10:00	1821139	353	<1	3.2	686	93	0.5	69	34.06	174	9.4	333
					06/05/2021 10:00	1831737	205	1	3.1	263	95	0.2	47	34.9	157	10.1	58
					24/06/2021 10:00	1849548	66	<1	2.8	125	93	0.9	23	35.39	325	14.7	59
					22/07/2021 10:00	1860626	70	1	5.6	173	92	0.8	33	34.69	109	17.6	103
					19/08/2021 09:00	1870746	21	<1	2.3	21	93	1.2	33	34.82	1124	17	<40
					16/09/2021 10:32	1881218	61	<1	2.4	109	93	0.9	45	34.81	255	16.2	48
									2.95				**39**				
DCC	ASW 4S	123_ESTUAR	130846	(130846) Liffey Estuary Lower, 75m North of Poolbeg Wall - Surface Sample	07/04/2021 10:00	1821140	213	<1	3.3	570	97	1.6	44	32.61	147	10.1	357
					06/05/2021 10:00	1831738	94	<1	2.1	183	100	0.6	32	34.05	142	10.7	89
					24/06/2021 10:00	1849549	36	<1	2.9	176	100	0.5	12	34.66	782	15.1	140
					22/07/2021 10:00	1860627	12	2	9.6	202	97	1.7	33	32.61	132	19.5	190
					19/08/2021 09:00	1870747	30	<1	2.5	108	100	0.8	24	33.24	385	18.5	78
					16/09/2021 10:20	1881219	424	1	1.7	1337	100	0.9	874	33.96	1459	18.2	913
									2.7				**32.5**				
DCC	ASW 4D	123_ESTUAR	130847	(130847) Liffey Estuary Lower, 75m North of Poolbeg Wall - Depth Sample	07/04/2021 10:00	1821141	305	<1	2.1	618	93	1.9	61	34.11	197	9.3	313
					06/05/2021 10:00	1831739	76	<1	2.7	76	95	0.6	30	34.95	99	10.2	<40
					24/06/2021 10:00	1849550	51	<1	3.1	186	92	0.9	17	35.42	757	14.7	135
					22/07/2021 10:00	1860628	<10	<1	2.7	< 50	92	0.8	23	34.77	75	17.4	<40
					19/08/2021 09:00	1870748	156	<1	2	283	93	0.8	66	34.82	496	16.8	127
					16/09/2021 10:21	1881220	48	<1	2.1	48	92	1	44	34.75	247	16.1	<40
									2.6				**37**				
DCC	ASW 5S	123_ESTUAR	130848	(130848) Liffey Estuary Lower, 100m North of Poolbeg Wall - Surface Sample	07/04/2021 10:00	1821142	54	<1	1.9	421	98	2.7	20	33.59	264	9.7	367
					06/05/2021 10:00	1831740	131	<1	2.1	198	100	0.8	36	34.41	138	10.4	67
					24/06/2021 10:00	1849551	89	<1	1.7	251	101	0.7	18	34.6	818	15	162
					22/07/2021 10:00	1860629	10	2	13.8	395	97	2.8	28	32.84	255	18.4	385
					19/08/2021 09:00	1870749	23	<1	2.1	96	100	0.6	25	33.4	375	17	73
					16/09/2021 10:07	1881221	73	<1	2.3	144	100	0.6	74	34.11	347	17.1	71

									2.1				26.5				
DCC	ASW 5D	123_ESTUAR	130849	(130849) Liffey Estuary Lower, 100m North of Poolbeg Wall - Depth Sample	07/04/2021 10:00	1821143	229	<1	2.7	541	96	0.9	48	34.09	132	9.5	312
					06/05/2021 10:00	1831741	78	<1	2.7	78	99	1.2	38	34.82	99	10.2	<40
					24/06/2021 10:00	1849552	57	<1	**2**	201	97	0.8	15	34.97	715	14.8	144
					22/07/2021 10:00	1860630	19	1	**4.1**	89	96	0.3	34	34.48	80	17.4	70
					19/08/2021 09:00	1870750	41	<1	**2.4**	145	96	0.8	27	34.58	418	16.6	104
					16/09/2021 10:08	1881222	57	<1	2.5	113	96	1	48	34.75	282	16.4	56
									2.6				36				
DCC	ASW 6S	123_ESTUAR	40063	(40063) Liffey City D/S Islandbdg Weir	07/04/2021 12:20	1821088	223	<1	3.7	3547	101	1.8	<10	0.3	442	8.9	3324
					06/05/2021 09:20	1831653	131	2	3.2	2693	92	3.4	<10	0.3	1129	9.9	2562
					24/06/2021 09:30	1849422	28	2	1.7	1913	94	4.2	<10	0.3	2623	17.1	1885
					22/07/2021 09:00	1860363	22	1	19	3309	95	4.6	<10	0.3	1638	21.7	3287
					19/08/2021 09:00	1870640	38	1	7.5	1995	89	9.7	17	0.3	2907	16.2	1957
					16/09/2021 08:55	1881080	<10	<1	1.2	1687	87	1.8	54	0.2	5496	15.8	1687
									3.4				<10				
DCC	ASW 7S	123_ESTUAR	40067	(40067) Liffey City Heuston Stn u/s Camac	07/04/2021 12:05	1821089	67	<1	5.9	2839	101	2.7	<10	2.2	1266	7.7	2772
					06/05/2021 09:35	1831654	147	2	2.4	2652	88	1.6	<10	0.5	1121	9.8	2505
					24/06/2021 09:45	1849423	44	<1	0.8	644	85	2.8	35	4.4	3227	16.2	600
					22/07/2021 09:20	1860364	49	<1	10.1	2947	82	2.8	25	3.1	1969	21.3	2898
					19/08/2021 09:15	1870641	35	<1	1.5	1623	89	3.6	18	0.7	5592	15.8	1588
					16/09/2021 09:15	1881081	37	<1	0.9	1574	88	1.2	64	2.1	5487	15.6	1537
									1.95				21.5				
DCC	ASW 8S	123_ESTUAR	40072	(40072) Liffey City Winetav St Bridge	07/04/2021 11:50	1821090	251	<1	8.4	3057	97	5	21	5.4	536	8.6	2806
					06/05/2021 11:20	1831655	124	2	12.9	2004	95	5	<10	5	1315	10.5	1880
					24/06/2021 10:10	1849424	138	1	<0.1	620	85	4.3	73	29	810	16	482
					22/07/2021 11:15	1860365	38	1	11.2	1661	84	3.5	27	7	1709	22.1	1623
					19/08/2021 11:00	1870642	34	1	1.5	579	88	2	30	5	5203	16.2	545
					16/09/2021 11:10	1881082	29	2	26.8	1466	89	12.3	66	6.1	4508	16.4	1437
									9.8				28.5				
DCC	ASW 9S	123_ESTUAR	40457	(40457) Liffey (S) D/S Toll Bridge	07/04/2021 11:35	1821091	340	<1	0.7	1590	98	0.7	11	23.9	471	8.1	1250
					06/05/2021 09:10	1831656	85	<1	0.7	1296	94	1.5	18	16.5	954	9.3	1211
					24/06/2021 10:30	1849425	111	<1	3.3	576	89	1.2	63	29.8	630	16.4	465
					22/07/2021 10:00	1860366	48	2	11.6	1198	100	2.9	30	17.3	1159	20.8	1150
					19/08/2021 09:40	1870643	51	<1	2.1	314	89	0.9	16	20.7	1075	16.2	263
					16/09/2021 09:40	1881083	99	<1	1.7	806	88	1.7	50	13.1	3557	15	707
									1.9				24				
DCC	ASW 10S	123_ESTUAR	45082	(45082) Tolka River D/S Annesley Bridge	07/04/2021 11:00	1821092	377	<1	4.8	2128	94	3	<10	3.8	1398	6.9	1751
					06/05/2021 10:50	1831657	121	1	5.7	1549	92	4.2	41	3.2	4067	9.3	1428
					24/06/2021 10:40	1849426	276	2	4.4	1636	79	3.1	97	28.2	1457	16.2	1360
					22/07/2021 10:15	1860367	360	3	21.9	1340	80	6.1	216	16.5	2697	21.2	980
					19/08/2021 10:25	1870644	45	>7	3.7	45	80	3.6	18	1.8	6767	16.4	<40
					16/09/2021 10:20	1881084	196	<1	8	757	74	4.4	84	2.5	6472	15.4	561
									5.25				62.5				

Appendix 7.1.3 Transitional Water Body Monitoring 2021 EPA DB 020 to DB 420

Report for Samples Taken During the Period: 01/01/2021 - 31/12/2021

Customer	EPA Code	Test List	Sampling Point	Sampling Point Description	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Bottom Oxygen % Sat.	Bottom Temperature °C	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	Oxygen at 0 m depth % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Salinity (mean) PSU	Silica µg/l as SiO2	Surface Temperature °C	Temperature °C	TON µg/l as N
				Surface Water Objectives for Transitional Water Bodies SI 272 of 2009				< 4 mg/l 95%-ile			High-Good 2.5-5.0 median Good - Moderate 5-10 (median)		0% PSU 70% - 130% 35% PSU 80% - 120%			0% -17% PSU : 60 ug/l P (median) 35% PSU : 40 ug/l P (median)						
				Compliant																		
				Non-Compliant																		
DCC	DB 020	123_ESTUAR	130870	(130870) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Surface Sar	07/04/2021 10:00	1821144	<10	<1			1.3	2685	96		0.7	<10	20.84		510		8.9	2685
					06/05/2021 10:00	1831742	97	<1			1.5	1708	97		1.7	18	13.61		1148		10.5	1611
					24/06/2021 10:00	1849553	72	<1			5.2	315	97		1.3	18	11.71		922		15.6	243
					22/07/2021 10:00	1860631	45	2			6.7	1496	95		3	31	19.91		1526		20.4	1451
					19/08/2021 09:00	1870751	27	<1			1.1	110	96		1	13	23.67		180		15.9	83
					16/09/2021 08:44	1881223	87	<1			1.5	707	96		1.4	65	22.61		2193		16.5	620
											1.5					18						
DCC	DB 020	123_ESTUAR	130871	(130871) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Depth Sam	07/04/2021 10:00	1821145	211	<1			4.4	470	93		<0.1	40	32.81		231		9.4	259
					06/05/2021 10:00	1831743	144	<1			5.2	212	93		2.5	68	33.89		243		10.1	68
					24/06/2021 10:00	1849554	143	1			5.1	313	93		1.3	29	31.62		782		15.4	170
					22/07/2021 10:00	1860632	140	2			14.4	405	93		1.5	71	32.91		302		17.6	265
					19/08/2021 09:00	1870752	46	<1			2.3	298	94		0.9	18	33.01		1044		15.5	252
					16/09/2021 08:45	1881224	137	<1			1.5	201	93		0.9	64	33.22		465		15.5	64
											4.75					52						
DCC	DB 120	123_ESTUAR	130800	(130800) Liffey Estuary Lower, Dodder Grand Canal Basin- Surface Samp	07/04/2021 10:00	1821127	<10	<1			0.7	1606	98		0.8	<10	23.73		4368		8.4	1606
					06/05/2021 10:00	1831725	217	1			1.7	1584	101		2.1	17	16.25		4089		10.5	1367
					24/06/2021 10:00	1849536	51	1			4	180	101		1.7	17	18.61		522		15.8	129
					22/07/2021 10:00	1860614	106	2			13.4	1307	99		3.8	40	25.02		1408		19.7	1201
					19/08/2021 09:00	1870734	47	<1			1.3	213	98		1.3	64	21.6		647		16	166
					16/09/2021 08:57	1881206	106	<1			1.2	611	97		0.9	52	19.41		2236		16.9	505
											1.5					28.5						
DCC	DB 120	123_ESTUAR	130801	(130801) Liffey Estuary Lower, Dodder Grand Canal Basin- Depth Sampl	07/04/2021 10:00	1821128	144	<1			2.7	541	96		2.3	39	33.27		308		9.3	397
					06/05/2021 10:00	1831726	144	<1			4.3	247	100		1.8	43	33.29		190		10.1	103
					24/06/2021 10:00	1849537	77	<1			5.5	331	100		1.2	21	34.47		700		15.3	254
					22/07/2021 10:00	1860615	56	2			17.5	447	96		8.8	42	33.24		276		18.4	391
					19/08/2021 09:00	1870735	93	2			14.2	867	94		10.4	63	33.72		6601		15.7	774
					16/09/2021 08:58	1881207	85	<1			1.3	173	92		0.9	49	33.62		425		15.4	88
											4.6					42.5						
DCC	DB 210	123_ESTUAR	130810	(130810) Liffey Estuary Lower, East Link Toll Bridge - Surface Sample	07/04/2021 10:00	1821129	<10	<1			0.8	1110	99		1.1	13	26.25		433		8.6	1110
					06/05/2021 10:00	1831727	105	<1			0.7	1320	100		1.7	29	20.23		987		10.6	1215
					24/06/2021 10:00	1849538	45	<1			3.7	236	102		2	14	24.61		1042		15.6	191
					22/07/2021 10:00	1860616	49	2			12.3	1170	100		3.8	26	23.44		1142		20.4	1121
					19/08/2021 09:00	1870736	52	<1			0.9	151	98		1.1	24	29.62		406		15.8	99
					16/09/2021 09:03	1881208	102	<1			1.2	589	98		0.6	57	30.41		1620		16.7	487
											1.5					25						
DCC	DB 210	123_ESTUAR	130811	(130811) Liffey Estuary Lower, East Link Toll Bridge - Depth Sample	07/04/2021 10:00	1821130	142	<1			2.5	412	94		1.2	46	33.35		177		9.2	270
					06/05/2021 10:00	1831728	132	<1			2.9	229	99		1.1	44	34.38		184		10	97
					24/06/2021 10:00	1849539	78	1			6.3	365	98		2.3	28	34.78		651		15.2	287
					22/07/2021 10:00	1860617	92	1			7.9	349	95		2.2	39	33.95		248		18.2	257
					19/08/2021 09:00	1870737	42	<1			3.3	265	94		1.7	14	34.07		675		15.3	223
					16/09/2021 09:27	1881209	72	<1			1.9	148	92		0.6	42	33.98		374		15.7	76
											3.1					41						
DCC	DB 220	123_ESTUAR	130820	(130820) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - Sur	07/04/2021 10:00	1821131	119	<1			2	592	99		1.1	45	29.7		297		8.9	473
					06/05/2021 10:00	1831729	99	<1			2	334	100		0.8	33	31.69		276		10.6	235
					24/06/2021 10:00	1849540	55	<1			3.2	175	101		2.3	20	32.19		527		15.5	120
					22/07/2021 10:00	1860618	43	2			13.8	417	100		1.8	35	33.21		251		18.5	374
					19/08/2021 09:00	1870738	44	<1			2.4	159	99		1	36	33.81		461		16.8	115
					16/09/2021 09:28	1881210	68	<1			1.6	164	98		0.7	40	33.17		445		17	96
											2.2					35.5						

DCC	DB 220	123_ESTUAR	130821 (130821) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - De	07/04/2021 10:00	1821132	277	<1			2.8	548	94		2.1	37	33.69		154		8.6	271
				06/05/2021 10:00	1831730	70	<1			2.5	70	98		1.1	24	34.42		100		10.4	<40
				24/06/2021 10:00	1849541	40	<1			3.6	157	98		0.6	14	35.16		638		15.2	117
				22/07/2021 10:00	1860619	47	2			3.6	118	96		1.1	28	34.28		88		17.7	71
				19/08/2021 09:00	1870739	15	<1			2.5	112	93		1	24	34.62		450		16.4	97
				16/09/2021 09:28	1881211	49	<1			2.3	99	93		1	43	34.31		283		16.5	50
										2.65					26						
DCC	DB 410	123_ESTUAR	130830 (130830) Liffey Estuary Lower, Ringsend Cascade - Surface Sample	07/04/2021 10:00	1821133	3205	4			0.5	3760	96		2.6	343	30.38		465		9.5	555
				06/05/2021 10:00	1831731	92	<1			2	240	99		0.5	33	33.61		193		10.6	148
				24/06/2021 10:00	1849542	53	<1			2.8	149	100		0.9	23	33.27		546		15.1	96
				22/07/2021 10:00	1860620	342	2			3.3	1935	100		0.9	593	33.75		2338		19.7	1593
				19/08/2021 09:00	1870740	10	<1			2.9	85	98		0.8	10	34.02		403		16.9	75
				16/09/2021 10:27	1881212	114	<1			2.1	302	98		0.9	161	34.2		466		18.2	188
										2.45					97						
DCC	DB 410	123_ESTUAR	130831 (130831) Liffey Estuary Lower, Ringsend Cascade- Depth Sample	07/04/2021 10:00	1821134	281	<1			3.2	549	92		1.5	47	33.99		274		9.2	268
				06/05/2021 10:00	1831732	91	<1				142	95			33	34.72		117		9.9	51
				24/06/2021 10:00	1849543	139	<1			2.7	235	92		0.6	25	35.39		430		14.5	96
				22/07/2021 10:00	1860621	40	<1			3.7	103	93		0.9	30	34.69		89		17.5	63
				19/08/2021 09:00	1870741	125	<1			2.5	207	93		1	59	34.98		251		15.6	82
				16/09/2021 10:28	1881213	52	<1			2.3	102	90		1	41	34.79		255		16.3	50
										2.7					37						
DCC	DB 420	123_ESTUAR	130839 (130839) Liffey Estuary Lower, Poolbeg Lighthouse - Composite Sample	07/04/2021 10:00	1821135	887	1	99.2	10	0.3	1278		99.9	4.4	142		34.36	233	10.2		391
				06/05/2021 10:00	1831733	354	2	101.2	10.4	2	1941		101.7	0.9	401		35.27	1593	10.6		1587
				24/06/2021 10:00	1849544	12	<1	101.4	15	1.7	124		102.7	0.6	11		35.8	629	15.2		112
				22/07/2021 10:00	1860622	82	2	101.1	16.5	7.6	347		101.8	2	57		35.54	141	16.7		265
				19/08/2021 09:00	1870742	128	<1	101	17	2.4	194		101.5	0.7	57		35.61	622	17.1		66
				16/09/2021 10:52	1881214	101	<1	100.6	17.3	2.1	173		100.9	0.9	75		35.47	327	17.5		72
										2.05					66						
DCC	DB 300	123_ESTUAR	45076 (45076) Tolka River U/S Drumcondra Bridge	07/04/2021 11:15	1821093	207	1			7.2	2094	114		6.4	13	0.4		1985		6.7	1887
				06/05/2021 11:00	1831658	120	2			6	1534	96		4.4	30	0.3		6397		9.6	1414
				24/06/2021 11:20	1849427	34	3			16.7	465	106		5.2	56	0.4		6310		16.2	431
				22/07/2021 10:50	1860368	50	1			16.2	1500	116		4.7	107	0.4		4885		19.9	1450
				19/08/2021 10:41	1870645	20	>7			13.9	254	91		6	14	0.3		7065		15.9	234
				16/09/2021 10:50	1881085	<10	2			10.9	979	99		4.5	68	0.3		7071		15.7	979
										12.4					43						
DCC	DB 320	123_ESTUAR	130900 (130900) Tolka Estuary at East Point Business Park Bridge - Surface Sam	07/04/2021 10:45	1821094	221	<1			3.3	1832	89		2.8	13	6.7		875		6.6	1611
				06/05/2021 10:40	1831659	383	1			4.3	1991	88		3.5	399	6.7		1600		8.7	1608
				24/06/2021 10:50	1849428	276	2			4.4	665	80		3.1	90	30		1309		16.3	389
				22/07/2021 10:35	1860369	198	6			44.3	961	97		12.1	231	20.2		1770		21.9	763
				19/08/2021 10:00	1870646	145	6			3.3	333	68		3	52	22.3		1051		16.4	188
				16/09/2021 10:05	1881086	479	>6			4.7	520	63		4.2	114	8		5298		15.5	50
										4.35					102						
DCC	DB 320	123_ESTUAR	130901 (130901) Tolka Estuary at East Point Business Park Bridge - Depth Samp	07/04/2021 11:35	1821095	117	<1			0.8	1477	88		1.4	18	11.2		553		6.8	1360
				06/05/2021 10:25	1831660	134	1			3.6	1219	84		3.3	47	10.3		3151		9.1	1085
				24/06/2021 11:00	1849429	239	1			3.2	239	91		2.5	110	30.8		1178		16.8	<40
				22/07/2021 10:25	1860370	234	>7			57.1	823	104		15.4	281	21.4		1537		22.4	689
				19/08/2021 10:15	1870647	117	3			2.7	286	81		2.4	55	22.9		790		16.7	169
				16/09/2021 09:55	1881087	387	>6			4	512	63		3.6	158	9.2		3718		15.3	125
										3.4					82.5						
DCC	DB 330	123_ESTUAR	130910 (130910) Tolka Estuary, Castle Ave. - Surface Sample	06/05/2021 10:00	1831744	237	1			1.7	510	100		1.2	76	34.89		540		9.7	273
										1.7					76						
DCC	DB 330	123_ESTUAR	130911 (130911) Tolka Estuary, Castle Ave. - Depth Sample	06/05/2021 10:00	1831745	240	1			3.3	351	99		1.7	80	35.27		232		9.3	111
										3.3					80						
DCC	DB 330	123_ESTUAR	130912 (130912) Tolka Estuary, Castle Ave. - Composite Sample	07/04/2021 10:00	1821146	53	<1	98.5	8.5		452		98.6		26		34.07	269	8.6		399
				24/06/2021 10:00	1849555	66	1	100.6	15.4	4.3	255		100.8	1.5	16		35.5	841	15.5		189
				22/07/2021 10:00	1860633	21	5	99.2	20.8	47	200		99.4	13.1	82		34.39	73	21		179
				19/08/2021 09:00	1870753	56	<1	99.7	16.5	2.7	173		99.8	1	21		34.81	483	16.5		117
				16/09/2021 09:46	1881225	148	2	99.5	15.9	3.2	379		99.6	1.7	155		34.66	773	16		231
										3.75					26						
DCC	DB 340	123_ESTUAR	130922 (130922) Tolka Estuary, Clontarf Boat Club - Composite Sample	07/04/2021 10:00	1821147	106	<1	98.1	8.4		432		98.2		31		34.41	165	8.5		326
				06/05/2021 10:00	1831746	85	<1	100.3	9.9	2.3	150		100.4	0.7	18		35.16	217	10		65

					24/06/2021 10:00	1849156	38	<1	100.9	15.2	3.2	161		101	0.8	18		35.46	556	15.2		123
					22/07/2021 10:00	1860634	10	2	100.3	18.9	7.5	110		100.5	5.6	65		34.57	73	19		100
					19/08/2021 09:00	1870754	43	<1	100.1	16.4	2.7	142		100.3	0.7	25		35.02	453	16.5		99
					16/09/2021 09:38	1881226	156	<1	100.5	17	2.7	313		100.6	1.1	141		34.72	602	17		157
											2.7					**28**						
DCC	DB 350	123A_ESTUA		**130932 (130932) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Compos**	07/04/2021 10:00	1821148	192	<1	99.5	8.3		614		99.6		36		34.56	334	8.3		422
					06/05/2021 10:00	1831747	131	<1	100.6	10	2.3	396		100.6	1.1	35		35.2	492	10.1		265
					24/06/2021 10:00	1849557	160	<1	101.2	15.4	3.9	305		101.2	0.8	59		34.98	471	15.4		145
					22/07/2021 10:00	1860635	23	3	100.6	20.3	17.2	340		100.6	6.6	63		35.02	124	20.3		317
					19/08/2021 09:00	1870755	45	<1	100.2	16.8	2.8	135		100.2	0.0	24		34.97	381	16.9		90
					16/09/2021 09:57	1881227	112	<1	99.8	16.9	2.3	223		99.8	1.5	107		34.89	502	16.9		111
											2.8					**47.5**						

Appendix 7.1.4 Dublin Bay Water Quality Monitoring Points Agreed by the EPA

Report for Samples Taken During the Period: 01/01/2021 - 31/12/2021

Customer	EPA Code	Test List	Sampling Point	Sampling Point Det	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Bottom Oxygen % Sat.	Bottom Temperature °C	Chlorophyll a mg/m3	DIN µg/l	Oxygen at 0 m depth % Sat.	Phosphytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity (mean) PSU	Silica µg/l as SiO2	Surface Temperature °C	TON µg/l as N	Test Comment
				Surface Water Objectives for Transitional Water Bodies SI 272 of 2009					95%-ile 0% PSU 70% - 130% 35% PSU 80% -120%		High- Good 2.5 Median Good -Moderate 5.0 Median	High Status < 170 ug/l N Good Status 0% PSU <2,600 ug/ 34.5% PSU <250 ug	95%-ile 0% PSU 70% - 130% 35% PSU 80% -120%							
				Compliant																
				Non-Compliant																
DCC	DB 610	123A_ESTUAR	130602	(130602) Irish Sea Dublin, Bailey - Composite Sample	05/05/2021 10:00	1831174	40	<1	101.4	9.9	2.4	40	102.3	1.4	25	35.81	72	10.3	<40	
					23/06/2021 09:00	1848834	19	<1	101.4	13.7		19	103		26	35.69	56	14.4	<40	Sample included cloudy interferent material that produced a false reading. The result was rejected.
					21/07/2021 10:00	1860146	26	<1	101.3	15.9	2.1	68	102.6	0.7	26	35.04	52	16.4	42	
					18/08/2021 09:00	1870180	<10	<1	102.5	16	2.1	73	102.8	0.9	34	35.89	228	16.2	73	
											2.1									
DCC	DB 430	123A_ESTUAR	130702	(130702) Dublin Bay,1km NE Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831166	80	<1	100.3	10	2.7	80	100.8	0.4	27	35.51	101	10.2	<40	
					23/06/2021 09:00	1848826	18	<1	101.1	14.3	1.3	18	101.7	0.1	23	35.26	68	14.4	<40	
					21/07/2021 10:00	1860132	17	1	101.6	16.2	6.4	17	101.9	1.3	34	35.96	58	16.4	<40	
					18/08/2021 09:00	1870172	<10	<1	101.5	15.8	2.9	503	101.9	0.9	34	35.27	1388	15.9	503	
											2.8									
DCC	DB 450	123A_ESTUAR	130712	(130712) Dublin Bay, South Bull Bouy, 1km SE Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831167	141	<1	100.3	10.1	3.1	141	101.1	0.9	30	35.59	117	10.3	<40	
					23/06/2021 09:00	1848827	16	<1	100.5	14	3.2	16	101.7	<0.1	23	35.42	73	14.4	<40	
					21/07/2021 10:00	1860133	13	<1	101.7	15.7	1.3	13	102	0.6	20	35.96	64	15.9	<40	
					18/08/2021 09:00	1870173	<10	<1	101.5	15.6	2.4	128	102.1	0.8	33	35.41	449	16	128	
											2.75									
DCC	DB 510*	123A_ESTUAR	130722	(130722) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831169	81	<1	100.9	9.8	2.7	81	101.3	0.9	27	35.68	96	10.1	<40	
					23/06/2021 09:00	1848829	16	<1	100.5	13.9	<0.1	16	101.3	1.7	21	35.53	68	14.4	<40	
					21/07/2021 10:00	1860135	34	1	101.1	16.1	4.7	78	101.4	0.8	24	35.79	51	16.3	54	
					18/08/2021 09:00	1870175	<10	<1	101.4	15.8	2.5	371	102	0.7	103	35.46	407	16.1	371	
											2.6									
DCC	DB 540*	123A_ESTUAR	130732	(130732) Dublin Bay, 2.5km SSE Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831170	51	<1	100	9.9	2.8	51	100.9	0.9	23	35.72	80	10.3	<40	
					23/06/2021 09:00	1848830	17	<1	100.1	13.9	<0.1	17	101.2	8.2	23	35.55	59	14.4	<40	
					21/07/2021 10:00	1860136	13	<1	101.1	16	1.5	79	101.6	0.3	20	35.85	67	16.3	64	
					18/08/2021 09:00	1870176	28	<1	102	15.5	1.9	28	102.5	0.7	29	35.48	241	16.1	<40	
											1.7									

DCC	DB 550	123A_ESTUAR	130742	(130742) Dublin Bay, No. 4 Bouy, 2.5km E of S Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831168	45	<1		100.3	9.9	2.1	43	101.5	0.4	21	35.75	68	10.2	<40		
					23/06/2021 09:00	1848828	19	<1		101	14		19	101.8		<10	35.43	64	14.2	<40		Sample included cloudy interferent material that produced a false reading. The result was rejected
					21/07/2021 10:00	1860134	24	<1		101.4	16.1	1.3	80	101.8	0.5	23	35.93	75	16.2	56		
					18/08/2021 09:00	1870174	11	<1		101	15.6	2	125	101.6	1	31	35.63	335	16	114		
												2													
DCC	DB 560	123A_ESTUAR	130752	(130752) Dublin Bay, Drumleck Point, 5km ENE Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831172	72	<1		100.5	9.9	1.9	72	101.9	0.8	23	35.72	81	10.3	<40		
					23/06/2021 09:00	1848832	45		1	100.4	13.9	0.9	45	101.6	2.1	26	35.62	84	14.4	<40		
					21/07/2021 10:00	1860138	82	<1		102	16	7.1	155	102.4	0.7	24	35.83	63	16.2	123		
					18/08/2021 09:00	1870178	10	<1		101.8	15.9	2	1718	102	0.9	489	35.5	1068	16.1	1708		
												1.95													
DCC	DB 570*	123A_ESTUAR	130762	(130762) Dublin Bay, 5km ESE Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831175	38	<1		101.1	9.9	2.9	38	101.9	1.7	19	35.75	76	10.3	<40		
					23/06/2021 09:00	1848833	14	<1		100.6	13.7		14	102.1		29	35.59	59	14.3	<40		Sample included cloudy interferent material that produced a false reading. The result was rejected
					21/07/2021 10:00	1860145	83	<1		101.3	15.9	1.9	154	102	0.3	24	35.91	64	16.2	171		
					18/08/2021 09:00	1870179	10	<1		102.4	15.8	2.5	1602	102.7	0.5	496	35.77	1020	16.1	1592		
												2.5													
DCC	DB 580	123A_ESTUAR	130772	(130772) Dublin Bay, Dun Laoghaire, 5km E of S Poolbeg Lighthouse - Composite Sample	05/05/2021 10:00	1831171	75	<1		99.5	9.7	2.4	75	100.6	0.5	31	35.81	79	10.3	<40		
					23/06/2021 09:00	1848831	19	<1		100.3	13.9	1.3	19	101.2	<0.1	29	35.57	70	14.5	<40		
					21/07/2021 10:00	1860137	26	<1		101.8	16.1	1.6	72	102.4	0.3	22	35.81	74	16.3	46		
					18/08/2021 09:00	1870177	<10	<1		102	15.9	1.7	174	102.7	0.6	68	35.7	321	16.1	174		
												1.65													

Appendix 7.1.5 Bathing Water Monitoring

Report for Samples Taken During the Period: 01/06/2021 - 30/09/2021

Customer	EPA Code	Test List	Samplin	Sampling Point Description	Sampled Date	Sample Number	E. coli	Enterococci	Enterococci (Confirmed)	Floating Materials	Mineral Oil (visual)	pH	Phenols_Olfactory	Salinity	Surfactants	Visual Inspection
							MPN/100 ml	CFU/100ml	CFU/100ml			pH		PSU		
				Compliant with SUFFICIENT QUALITY												
				Non-Compliant with SUFFICIENT QUALITY												
				POOLBEG DISCHARGE PLUME												
DCC	ASW 11	121_BEACH	40520 (40520)	Dollymount North	08/06/2021 11:00	1843220	31		7	Absent	Absent	8.3	Absent	34.7	Absent	Normal
					15/06/2021 15:30	1845901	31		5	Ectocarpus Present	Absent	8.5	Absent		Absent	Ectocarpus Present
					22/06/2021 09:55	1848246	20	<1		Ectocarpus Present	Absent	8.3	Absent		Absent	Ectocarpus present
					27/06/2021 14:20	1850228	52		5	Absent	Absent	8.5	Absent	33.7	Absent	Normal
					05/07/2021 09:10	1853362	85		11	Ectocarpus Present	Absent	8.2	Absent	32.2	Absent	Ectocarpus present
					06/07/2021 09:10	1854057	379		14	Ectocarpus Present	Absent	8.2	Absent	33	Absent	Ectocarpus present
					13/07/2021 14:00	1857127	20		2	Ectocarpus Present	Absent	8.4	Absent	33.8	Absent	Ectocarpus present
					20/07/2021 12:10	1859637	<10	<1		Present	Absent	8.2	Absent	34.1	Absent	Ectocarpus Present
					27/07/2021 15:10	1862547	31		48	Ectocarpus Present	Absent	8.2	Absent	33.4	Absent	Ectocarpus present
					03/08/2021 10:35	1864570	20		5	Ectocarpus Present	Absent	8.3	Absent	33.7	Absent	Ectocarpus present
					09/08/2021 11:45	1866947	279		100	Ectocarpus Present	Absent	8.4	Absent	32.9	Absent	Ectocarpus present
					10/08/2021 11:30	1867394	10		11	Ectocarpus Present	Absent	8.2	Absent	33.2	Absent	Ectocarpus present
					18/08/2021 10:35	1870192	332		220	Ectocarpus Present	Absent	8.1	Absent	33.5	Absent	Ectocarpus present
					23/08/2021 12:00	1871703	20		1	Ectocarpus Present	Absent	8.3	Absent	33.5	Absent	Ectocarpus present
					25/08/2021 11:30	1872840	10		4	Ectocarpus Present	Absent	8.3	Absent	32.6	Absent	Ectocarpus present
					01/09/2021 10:20	1875222	97		19	Ectocarpus Present	Absent	8.1	Absent	33.7	Absent	Ectocarpus present
					05/09/2021 11:15	1876599	10		4	Ectocarpus Present	Absent	8.3	Absent	31.7	Absent	Ectocarpus Present
					07/09/2021 12:00	1877333	<10		3	Ectocarpus Present	Absent	8.3	Absent	32.1	Absent	Ectocarpus
					15/09/2021 06:30	1880245	20		27	Ectocarpus Present	Absent	8.1	Absent	34	Absent	Ectocarpus present
					Number		19	2	17	19	19	19	19	17	19	19
DCC	ASW 12*	121_BEACH	40526 (40526)	Dollymount Bathing Zone	08/06/2021 11:20	1843221	63		16	Absent	Absent	8.2	Absent	34.6	Absent	Normal
					15/06/2021 15:45	1845902	10		1	Ectocarpus Present	Absent	8.6	Absent		Absent	Ectocarpus Present
					22/06/2021 10:10	1848247	<10		1	Ectocarpus Present	Absent	8.3	Absent		Absent	Ectocarpus present
					27/06/2021 14:40	1850229	<10		3	Absent	Absent	8.6	Absent	33.8	Absent	Normal
					05/07/2021 09:25	1853363	74		7	Ectocarpus Present	Absent	8.2	Absent	32.7	Absent	Ectocarpus present
					06/07/2021 09:25	1854058	121		7	Ectocarpus Present	Absent	8.2	Absent	32.9	Absent	Ectocarpus present
					13/07/2021 14:30	1857128	10	<1		Ectocarpus Present	Absent	8.4	Absent	33.2	Absent	Ectocarpus present
					20/07/2021 12:30	1859638	836		38	Present	Absent	8.2	Absent	34.3	Absent	Ectocarpus Present
					27/07/2021 15:40	1862548	31		15	Ectocarpus Present	Absent	8.2	Absent	33.9	Absent	Ectocarpus present
					03/08/2021 10:45	1864571	41		16	Ectocarpus Present	Absent	8.3	Absent	33.6	Absent	Ectocarpus present
					09/08/2021 11:55	1866948	148		20	Ectocarpus Present	Absent	8.2	Absent	33.3	Absent	Ectocarpus present
					10/08/2021 11:40	1867395	31		5	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus present
					18/08/2021 10:45	1870193	86		29	Ectocarpus Present	Absent	8.1	Absent	33.7	Absent	Ectocarpus present
					23/08/2021 11:45	1871704	74		7	Ectocarpus Present	Absent	8.4	Absent	33.6	Absent	Ectocarpus present
					25/08/2021 11:40	1872841	20		1	Ectocarpus Present	Absent	8.3	Absent	33.4	Absent	Ectocarpus present
					01/09/2021 10:35	1875223	85		16	Ectocarpus Present	Absent	8.1	Absent	33.7	Absent	Ectocarpus present
					05/09/2021 11:25	1876600	31		14	Ectocarpus Present	Absent	8.3	Absent	31.5	Absent	Ectocarpus Present
					07/09/2021 12:11	1877334	20		23	Ectocarpus Present	Absent	8.3	Absent	32.3	Absent	Ectocarpus
					15/09/2021 06:45	1880246	84		870	Ectocarpus Present	Absent	8.1	Absent	33.8	Absent	Ectocarpus present
					Number		19	1	18	19	19	19	19	17	19	19
DCC	ASW 13	121_BEACH	40530 (40530)	Dollymount South	08/06/2021 12:00	1843222	10		1800	Absent	Absent	8.1	Absent	34.3	Absent	Normal
					15/06/2021 16:15	1845903	31		8	Ectocarpus Present	Absent	8.4	Absent		Absent	Ectocarpus Present

					22/06/2021 10:25	1848248	<10		4	Ectocarpus Present	Absent	8.3	Absent		Absent	Ectocarpus present
					27/06/2021 15:00	1850230	31		17	Absent	Absent	8.8	Absent	34.1	Absent	Normal
					05/07/2021 09:50	1853364	160		45	Ectocarpus Present	Absent	8.1	Absent	33.5	Absent	Ectocarpus present
					06/07/2021 09:50	1854059	20		80	Ectocarpus Present	Absent	8.2	Absent	33.2	Absent	Ectocarpus present
					13/07/2021 14:45	1857129	20		1	Absent	Absent	8.2	Absent	33.2	Absent	Normal
					20/07/2021 12:50	1859639	31		5	Present	Absent	8.2	Absent	33	Absent	Ectocarpus Present
					27/07/2021 16:30	1862549	10		26	Absent	Absent	8.1	Absent	33.9	Absent	Normal
					03/08/2021 11:15	1864572	228		15	Ectocarpus Present	Absent	8.2	Absent	33.5	Absent	Ectocarpus present
					09/08/2021 12:20	1866949	10		38	Ectocarpus Present	Absent	8.1	Absent	33.7	Absent	Ectocarpus present
					10/08/2021 12:05	1867396	243		83	Ectocarpus Present	Absent	8.1	Absent	33.4	Absent	Ectocarpus present
					18/08/2021 10:10	1870194	52		15	Ectocarpus Present	Absent	8.1	Absent	33.7	Absent	Ectocarpus present
					23/08/2021 12:20	1871705	86		4	Ectocarpus Present	Absent	8.1	Absent	33.2	Absent	Ectocarpus present
					25/08/2021 11:55	1872842	20	<1		Ectocarpus Present	Absent	8.1	Absent	33.6	Absent	Ectocarpus present
					01/09/2021 10:50	1875224	171		28	Ectocarpus Present	Absent	8.1	Absent	34.2	Absent	Ectocarpus present
					05/09/2021 11:45	1876601	262		42	Ectocarpus Present	Absent	8.4	Absent	31.3	Absent	Ectocarpus Present
					07/09/2021 12:25	1877335	189		38	Ectocarpus Present	Absent	8.2	Absent	31.7	Absent	Ectocarpus
					15/09/2021 07:20	1880247	63		24	Ectocarpus Present	Absent	8	Absent	33.6	Absent	Ectocarpus present
						Number	**19**	**1**	**18**	**19**	**19**	**19**	**19**	**17**	**19**	**19**
DCC	**ASW 14**	**121_BEACH**	**40535 (40535) Bull Wall Wood Causeway**		08/06/2021 11:45	1843223	121		11	Absent	Absent	8	Absent	31.3	Absent	Normal
					15/06/2021 16:00	1845904	<10		5	Absent	Absent	8.2	Absent		Absent	Normal
					22/06/2021 10:35	1848249	85		12	Absent	Absent	8.2	Absent		Absent	Normal
					27/06/2021 15:20	1850231	<10		5	Absent	Absent	8.2	Absent	33.3	Absent	Normal
					05/07/2021 10:00	1853365	3654		1420	Absent	Absent	8.1	Absent	29.5	Absent	Normal
					06/07/2021 09:40	1854060	504		67	Absent	Absent	8.2	Absent	28.6	Absent	Normal
					13/07/2021 14:50	1857130	85		6	Absent	Absent	8.1	Absent	30.4	Absent	Normal
					20/07/2021 12:40	1859640	86		5	Absent	Absent	8.5	Absent	32.8	Absent	Normal
					27/07/2021 17:00	1862550	109		25	Absent	Absent	8.1	Absent	33.7	Absent	Normal
					03/08/2021 11:05	1864573	52		15	Absent	Absent	8.1	Absent	32	Absent	Normal
					09/08/2021 12:10	1866950	211		33	Absent	Absent	8	Absent	30.9	Absent	Normal
					10/08/2021 11:55	1867397	295		56	Absent	Absent	8.1	Absent	31.5	Absent	Normal
					18/08/2021 10:00	1870195	97		21	Absent	Absent	8	Absent	32.2	Absent	Normal
					23/08/2021 12:30	1871706	530		38	Absent	Absent	8.2	Absent	31.2	Absent	Normal
					25/08/2021 12:05	1872843	171		96	Ectocarpus Present	Absent	8.2	Absent	30	Absent	Ectocarpus present
					01/09/2021 11:05	1875225	62		31	Absent	Absent	8.1	Absent	31.8	Absent	Normal
					05/09/2021 11:55	1876602	404		24	Ectocarpus Present	Absent	8	Absent	29.9	Absent	Ectocarpus Present
					07/09/2021 12:35	1877336	20		12	Absent	Absent	8.2	Absent	32.4	Absent	Normal
					15/09/2021 07:30	1880248	538		1880	Absent	Absent	7.9	Absent	26.9	Absent	Normal
						Number	**19**	**0**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**
DCC	**ASW 15**	**121P_BW**	**40538 (40538) Poolbeg Outfall Main Discharg**		08/06/2021 12:03	1843224	1096		4900	Absent	Absent	7.8	Absent	28.9	Absent	Normal
					15/06/2021 15:15	1845905	1626		3100	Absent	Absent	8	Absent		Absent	Normal
					22/06/2021 11:10	1848250	2306		11500	Absent	Absent	7.8	Absent		Absent	Normal
					27/06/2021 14:20	1850232	6152		891	Absent	Absent	7.7	Absent	23.6	Absent	Normal
					05/07/2021 10:40	1853366	3410		10300	Absent	Absent	7.8	Absent	26.3	Absent	Normal
					06/07/2021 10:30	1854061	14540		19200	Absent	Absent	7.8	Absent	25	Absent	Normal
					13/07/2021 17:20	1857132	1785		>2000	Absent	Absent	7.6	Absent	25	Absent	Normal
					20/07/2021 11:10	1859641	820		173	Absent	Absent	7.9	Absent	29.1	Absent	Normal
					27/07/2021 14:25	1862541	>48392		>20000	Absent	Absent	7.4	Absent	21.5	Absent	Normal
					03/08/2021 09:40	1864574	1092		3300	Absent	Absent	7.7	Absent	25.4	Absent	Normal
					09/08/2021 12:50	1866951	341		20	Absent	Absent	8	Absent	30.1	Absent	Normal
					10/08/2021 12:40	1867398	1918		>2000	Absent	Absent	7.8	Absent	26.9	Absent	Normal
					18/08/2021 09:10	1870196	242		145	Absent	Absent	7.9	Absent	31.3	Absent	Normal
					23/08/2021 13:10	1871707	1866		49	Absent	Absent	7.8	Absent	24.7	Absent	Normal
					25/08/2021 12:35	1872844	3446		1191	Absent	Absent	7.7	Absent	25.4	Absent	Normal
					01/09/2021 09:25	1875226	211		109	Absent	Absent	8	Absent	30.1	Absent	Normal
					05/09/2021 11:10	1876603	188		36	Absent	Absent	8.1	Absent	31.4	Absent	Normal
					07/09/2021 13:15	1877337	1714		350	Absent	Absent	7.9	Absent	28	Absent	Normal
					15/09/2021 06:50	1880249	1204		3300	Absent	Absent	7.7	Absent	26.4	Absent	Normal

					Number	19	0	19	19	19	19	19	17	19	19
DCC	ASW 16	121_BEACH	40540 (40540) Half Moon Club S-Side Wall	08/06/2021 13:00	1843225	20		5	Absent	Absent	8	Absent	35.3	Absent	Normal
				15/06/2021 15:40	1845906	<10		1	Ectocarpus Present	Absent	8.2	Absent		Absent	Ectocarpus present
				22/06/2021 11:30	1848251	10		2	Absent	Absent	8.1	Absent		Absent	Normal
				27/06/2021 15:00	1850233	10		23	Absent	Absent	8.1	Absent	33.5	Absent	Normal
				05/07/2021 11:05	1853367	63		15	Ectocarpus Present	Absent	8	Absent	32.9	Absent	Ectocarpus present
				06/07/2021 10:50	1854062	<10		14	Ectocarpus Present	Absent	8.1	Absent	33	Absent	Ectocarpus present
				13/07/2021 17:00	1857131	<20		27	Ectocarpus Present	Absent	8.1	Absent	33.8	Absent	Ectocarpus present
				20/07/2021 11:25	1859642	187		20	Absent	Absent	8	Absent	32.9	Absent	Normal
				27/07/2021 18:00	1862551	20		9	Absent	Absent	8	Absent	33.5	Absent	Normal
				03/08/2021 10:05	1864575	10		7	Absent	Absent	8.1	Absent	33.5	Absent	Normal
				09/08/2021 13:15	1866952	10		5	Absent	Absent	8.1	Absent	33.8	Absent	Normal
				10/08/2021 13:05	1867399	107		15	Absent	Absent	8.1	Absent	33.6	Absent	Normal
				18/08/2021 09:25	1870197	10		1	Absent	Absent	8.1	Absent	33.9	Absent	Normal
				23/08/2021 13:30	1871708	98		7	Absent	Absent	8.1	Absent	33.2	Absent	Normal
				25/08/2021 12:55	1872845	20		2	Absent	Absent	8.2	Absent	33.4	Absent	Normal
				01/09/2021 09:45	1875227	30		4	Absent	Absent	8	Absent	32.9	Absent	Normal
				05/09/2021 11:40	1876604	86		3	Absent	Absent	8.1	Absent	33	Absent	Normal
				07/09/2021 13:30	1877338	20		4	Absent	Absent	8.1	Absent	33.8	Absent	Normal
				15/09/2021 06:30	1880250	10		5	Absent	Absent	8.1	Absent	33.6	Absent	Normal

					Number	19	0	19	19	19	19	19	17	19	19
DCC	ASW 17*	121_BEACH	40545 (40545) Sandymount	08/06/2021 13:20	1843226	52		78	Absent	Absent	8.1	Absent	35.4	Absent	Normal
				15/06/2021 16:10	1845907	9208		1	Absent	Absent	8.2	Absent		Absent	Normal
				22/06/2021 11:45	1848252	10		13	Absent	Absent	8.1	Absent		Absent	Normal
				27/06/2021 13:55	1850235	<10		4	Absent	Absent	8.1	Absent	33.8	Absent	Normal
				05/07/2021 11:20	1853368	457		220	Absent	Absent	8.2	Absent	30.3	Absent	Normal
				06/07/2021 11:10	1854063	31		6	Ectocarpus Present	Absent	8.1	Absent	33.8	Absent	Ectocarpus present
				13/07/2021 15:20	1857133	20		2	Absent	Absent	8.2	Absent	34.3	Absent	Normal
				20/07/2021 09:45	1859643	52		10	Absent	Absent	8.1	Absent	34.8	Absent	Normal
				27/07/2021 14:45	1862542	10		4	Absent	Absent	8.1	Absent	34	Absent	Normal
				03/08/2021 09:15	1864576	97		20	Ectocarpus Present	Absent	8.1	Absent	33.2	Absent	Ectocarpus present
				09/08/2021 13:30	1866953	233		36	Absent	Absent	8.1	Absent	33.7	Absent	Normal
				10/08/2021 13:20	1867400	108		21	Absent	Absent	8.1	Absent	33.9	Absent	Normal
				18/08/2021 08:40	1870198	1616		270	Absent	Absent	8	Absent	34.2	Absent	Normal
				23/08/2021 13:50	1871709	52		1	Ectocarpus Present	Absent	8.1	Absent	32.9	Absent	Ectocarpus present
				25/08/2021 13:30	1872846	153		6	Ectocarpus Present	Absent	8.3	Absent	34	Absent	Ectocarpus present
				01/09/2021 09:05	1875228	3448		220	Ectocarpus Present	Absent	8	Absent	33.1	Absent	Ectocarpus present
				05/09/2021 10:45	1876605	1354		176	Ectocarpus Present	Absent	8	Absent	32.3	Absent	Ectocarus Present
				07/09/2021 13:55	1877339	169		15	Ectocarpus Present	Absent	8.1	Absent	33.6	Absent	Ectocarpus
				15/09/2021 06:45	1880251	771		860	Ectocarpus Present	Absent	8.1	Absent	33.6	Absent	Ectocarpus present

					Number	19	0	19	19	19	19	19	17	19	19
DCC	ASW 18	121_BEACH	40550 (40550) Merrion Strand	08/06/2021 13:45	1843227	31		48	Absent	Absent	8.1	Absent	35.9	Absent	Normal
				15/06/2021 16:30	1845908	10		4	Ectocarpus Present	Absent	8.2	Absent		Absent	Ectocarpus present
				22/06/2021 12:05	1848253	52		13	Absent	Absent	8.1	Absent		Absent	Normal
				27/06/2021 14:20	1850236	<10		3	Ectocarpus Present	Absent	8.1	Absent	33.9	Absent	Ectocarpus present
				05/07/2021 11:45	1853369	85		37	Ectocarpus Present	Absent	8.2	Absent	32.9	Absent	Ectocarpus present
				06/07/2021 11:30	1854064	<10		10	Ectocarpus Present	Absent	8.2	Absent	33.9	Absent	Ectocarpus present
				13/07/2021 15:45	1857134	2014		107	Absent	Absent	8.1	Absent	36.5	Absent	Normal
				20/07/2021 10:00	1859644	10		3	Absent	Absent	8	Absent	34.9	Absent	Normal
				27/07/2021 15:10	1862543	31		12	Absent	Absent	8.1	Absent	34.2	Absent	Normal
				03/08/2021 08:55	1864577	146		25	Ectocarpus Present	Absent	8.1	Absent	33.7	Absent	Ectocarpus present
				09/08/2021 13:45	1866954	185		12	Ectocarpus Present	Absent	8.1	Absent	33.3	Absent	Ectocarpus present
				10/08/2021 13:35	1867401	10		5	Ectocarpus Present	Absent	8.1	Absent	33.7	Absent	Ectocarpus present
				18/08/2021 08:25	1870199	520		114	Ectocarpus Present	Absent	8	Absent	33.8	Absent	Ectocarpus present
				23/08/2021 14:05	1871710	63		4	Ectocarpus Present	Absent	8.2	Absent	33.4	Absent	Ectocarpus present

25/08/2021 13:50	1872847	52		4	Ectocarpus Present	Absent	8.2	Absent	33.9	Absent	Ectocarpus present
01/09/2021 08:20	1875229	6488		950	Ectocarpus Present	Absent	8.1	Absent	34.4	Absent	Ectocarpus present
05/09/2021 11:05	1876606	132		22	Ectocarpus Present	Absent	8.1	Absent	32.9	Absent	Ectocarpuss Present
07/09/2021 14:10	1877340	75		37	Ectocarpus Present	Absent	8.2	Absent	33.9	Absent	Ectocarpus
15/09/2021 07:05	1880252	842		220	Ectocarpus Present	Absent	8.2	Absent	33.9	Absent	Ectocarpus present
	Number	**19**	**0**	**19**	**19**	**19**	**19**	**19**	**17**	**19**	**19**

Appendix 7.2 – Priority Substance Assessment

Table 7.2.1: Screening of Effluent

Table 7.2.2: Impact on Receiving Waters

Table 7.2.3: Screening of Influent

Table 7.2.4: Screening of Influent Lines to Ringsend WWTP

Ringsend Influent and Effluent Priority Substances Screening 2021

To comply with condition **4.11.1** of Licence D0034-01, 2 sub-samples of the Ringsend composite influent and effluent were analysed in 2021 for a comprehensive suite of parameters from the:

- PRTR test suite
- EPA's 54 parameter test suite (Appendix 1, EPA Guidance on the Screening for Priority Substances for Waste Water Discharge Licences) which was issued on 17/01/11.

Summary of SBR Effluent Screening Results:

Effluent Sample Reference 1909233 taken on 01/12/2021.

See Table 7.2.1. Many of the parameters tested for the PRTR suite in this effluent sample were reported as below the detection limit.

Parameters from the EPA's Guidance document detected in this effluent sample are highlighted in **Table 7.2.1**. These included low (microgram and sub-microgram per litre) levels of:

VOCs: Toluene was detected at 0.36 ug/l.

PAHs: Pyrene was detected at 0.015 ug/l.

Pesticides: Mecoprop was detected at 0.07 ug/l and MCPA was detected at 0.14 ug/l.

Metals: The metals Arsenic (1.9 ug/l), Copper (55 ug/l), Zinc (144 ug/l), Mercury (0.027 ug/l), Chromium (3ug/l), Antimony (1.9 ug/l), Molybdenum (6 ug/l), Barium (26.3 ug/l), and Nickel (7 ug/l) were detected.

Results for other general parameters and additional tests were in the normal range for effluent sewage.

Table 7.2.1. EPA Appendix 1 – Ringsend Effluent Sample 1909233 - 2021 Screening

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	< 0.10 ug/l	**VOC's**
2.	Carbon Tetrachloride	< 1.00 ug/l	
3	1,2-Dichloroethane	< 1.00 ug/l	
4	Dichloromethane	< 1.00 ug/l	
	Bromodichloromethane	< 1.00 ug/l	
5	Tetrachloroethylene	< 1.00 ug/l	
6	Trichloroethylene	< 1.00 ug/l	
7	Trichlorobenzene (1,2.4)	< 10.00 ng/l	
8	Trichloromethane (Chloroform)	< 1.00 ug/l	
9	Xylenes (all isomers)	< 0.30 ug/l	
10	Ethyl Benzene	< 0.10 ug/l	
11	Toluene	**0.36 ug/l**	
12	Naphthalene	< 0.01 ug/l	**PAH's**
13	Fluoranthene	< 0.010 ug/l	
14	Benzo(k)fluoranthene	< 0.010 ug/l	
15	Benzo(ghi)perylene	< 0.100 ug/l	
16	Indeno(1,2,3-c,d)pyrene	< 0.100 ug/l	
17	Benzo(b)fluoranthene	< 0.010 ug/l	
18	Benzo(a)pyrene	< 0.010 ug/l	
	Acenaphthene	< 0.010 ug/l	
	Pyrene	**0.015 ug/l**	
	Anthracene	< 0.010 ug/l	
	Fluorene	< 0.010 ug/l	
	Phenanthrene	< 0.010 ug/l	
	Benz(a)anthracene	< 0.010 ug/l	
		< 0.100 ug/l	**Total PAH's (16)**

No.	Compound	Result	Group of Compounds
19	Di(2-ethylhexyl)phthalate (DEHP)	< 20 ug/l	**Plasticisers**
	Diethyl Phthalate	< 10 ug/l	
20	Isodrin	< 8 ng/l	**Pesticides**
21	Dieldrin	< 9 ng/l	
22	Diuron	< 0.10 ug/l	
23	Isoproturon	< 0.10 ug/l	
24	Atrazine	< 0.029 ug/l	
25	Simazine	< 0.036 ug/l	
26	Glyphosate	< 1 ug/l	
27	Mecoprop	**0.07 ug/l**	
28	2,4-D	< 0.05 ug/l	
29	MCPA	**0.14 ug/l**	
30	Linuron	< 0.10 ug/l	
31	Dichlobenil	< 5 ng/l	
32	2,6-Dichlorobenzamide	N/A*	
	Diazinon	< 0.013 ug/l	
	Dimethoate	< 0.020 ug/l	
33	PCB's (Sum of 7)	< 0.039 ug/l	**PCB's**
34	Phenols	< 1.5 ug/l	**Phenols**
	m,p- Methylphenol	<0.30 ug/l	**Cresols**
	o- Methylphenol	< 10 ug/l	
35	Lead (Total as Pb)	< 6 ug/l	**Metals**
36	Arsenic (Total as As))	**1.9 ug/l**	
37	Copper (Total as Cu)	**55 ug/l**	

No.	Compound	Result	Group of Compounds
38	Zinc (Total as Zn)	**144 ug/l**	
39	Cadmium (Total as Cd)	< 0.60 ug/l	
40	Mercury (Total as Hg)	**0.027 ug/l**	
41	Chromium (Total as Cr)	**3 ug/l**	
42	Selenium (Total as Se)	< 0.60 ug/l	
43	Antimony (Total as Sb)	**1.9 ug/l**	
44	Molybdenum (Total as Mo)	**6 ug/l**	
45	Tin (Total as Sn)	< 7 ug/l	
	Organo-Tin	< 0.02 ug/l	
	Tributyl Tin	< 0.02 ug/l	
46	Barium (Total as Ba)	**26.3 ug/l**	
47	Boron (Total as B)	< 0.23 mg/l	
48	Cobalt (Total as Co)	<0.002 mg/l	
49	Vanadium (Total as V)	< 4.00 ug/l	
50	Nickel (Total as Ni)	**7 ug/l**	
51	Fluoride (as F)	0.7 mg/l	**General**
52	Chloride (as Cl)	414 mg/l	
53	TOC (as C)	-	
54	Cyanide (Total as CN)	< 9 ug/l	
55	Sulphate (Total as SO4)	104 mg/l	
	(Sample 1909136)		
56	Conductivity	1684 uS/cm (20 degrees C)	**Additional Tests**
57	Hardness (mg/l CaCO3)	N/A	
58	pH	7.4	

Assessment of the Significance of the Discharge SW1 on Receiving Water Quality - 2021

A summary of effluent screening results is presented below with a limited assessment of the significance of the discharge on receiving water. Note that the SBR effluent results are sampled at the licensed point of discharge (SW1) and that a mixing zone boundary has not been defined in WWDL D0034-01.

SBR Effluent from SW1 receives a significant dilution within the undefined near field mixing zone before receiving water standards are applicable.

Chromium (Total), Copper and Zinc were the only metals screened in the effluent sample that exceeded the EQS's set for the receiving waters. Diazinon was close to the annual average (AA) EQS.

A minimum dilution factor of 2 to 6 in the near field mixing zone allows for compliance with the EQS's for specific pollutants which are set as an annual average (AA).

This assessment does not indicate a significant impact from the specific pollutants listed for the receiving waters outside the near field of the SW1 discharge point.

Table 7.2.2 Assessment of the Significance of the Discharge SW1 on Receiving Water Environmental Quality Standards for Specific Pollutants (Table 10, S.I. No. 272 of 2009, as amended)

Specific Pollutant Parameter	AA-EQS (ug/l)	Effluent 1909233 (01/12/21)
		SW1
Arsenic	20	1.9
Chromium VI	0.6	3*
Copper	5	55
Cyanide	10	< 9
Diazinon	0.01	< 0.013
Dimethoate	0.8	< 0.020
Fluoride	1,500	700
Glyphosate	-	< 1
Linuron	0.7	< 0.10
Mancozeb	2	-
Monochlorobenzene	25	< 1.0
Phenols	8	< 1.5

Specific Pollutant Parameter	AA-EQS (ug/l)	Effluent 1909233 (01/12/21)
Toluene	**10**	**0.36**
Xylenes	**10**	**< 0.30**
Zinc	**40**	**144**

* = Total Chromium which is > Chromium VI

Ringsend Influent Screening 2021

To comply with condition **4.11.2 of Licence D0034-01**, a sample of the Ringsend influent was analysed during 2021 (on 01/12/21) – same date as the effluent sample reported above, for agglomeration regulation purposes.

Investigation of the sources of any dangerous substances detected in monitoring of the influent was carried out by monitoring the 4 incoming lines to the plant on 01/12/21.

Samples were tested for:

- PRTR test suite
- EPA's 54 parameter test suite (Appendix 1, EPA Guidance on the Screening for Priority Substances for Waste Water Discharge Licenses) issued on 17/01/11

Summary of Influent Screening Results:

2021– Influent Sample Reference 1909232 of 01/12/21.

See **Table 7.2.3.** Many of the parameters tested for the PRTR suite in this influent sample were reported as below the detection limit.

Parameters from the EPA's Guidance document detected in this influent sample included low (sub-microgram and microgram per litre) concentrations of:

VOCs and BTEX compounds:

- Tri-chloromethane was detected at 4.21 ug/l.
- Benzene was detected at 0.17 ug/l.
- Xylenes (all isomers) were detected at 0.53 ug/l.
- Ethyl Benzene was detected 0.15 ug/l.
- Toluene was detected at 3.11 ug/l.

PAH's: Naphthalene (0.411 ug/l) and Phenanthrene (0.137 ug/l) were detected. All other PAH's were reported as below the detection limit.

Phenols : Phenols were detected at 163 ug/l.

Cresols: M,p-Methylphenol was detected at 381 ug/l.

Metals: The metals Lead (13 ug/l), Arsenic (2.8 ug/l), Copper (71 ug/l), Zinc (267 ug/l),Mercury (0.037 ug/l), Chromium (9 ug/l), Selenium (1.1 ug/l), Molydenum (19 ug/l), Barium (47.4 ug/l), Boron (0.24 mg/l), Cobalt (0.002 mg/l) and Nickel (11 ug/l) were detected.

See highlighted parameters in **Table 7.2.3**.

Results for general parameters and additional tests were in the normal range for influent sewage.

Table 7.2.3 - EPA Appendix 1 – Ringsend Influent Sample 1909232 – 2021 PRTR Screening

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	**0.17 ug/l**	**VOC's**
2.	Carbon Tetrachloride	< 1.00 ug/l	
3	1,2-Dichloroethane	< 1.00 ug/l	
4	Dichloromethane	< 1.00 ug/l	
	Bromodichloromethane	< 1.00 ug/l	
5	Tetrachloroethylene	< 1.00 ug/l	
6	Trichloroethylene	< 1.00 ug/l	
7	Trichlorobenzene (1,2.4)	< 15.00 ng/l	
8	Trichloromethane	**4.21 ug/l**	
9	Xylenes (all isomers)	**0.53 ug/l**	
10	Ethyl Benzene	**0.15 ug/l**	
11	Toluene	**3.11 ug/l**	
12	Naphthalene	**0.411 ug/l**	**PAH's**
13	Fluoranthene	< 0.100 ug/l	
14	Benzo(k)fluoranthene	< 0.100 ug/l	
15	Benzo(ghi)perylene	< 0.100 ug/l	
16	Indeno(1,2,3-c,d)pyrene	< 0.100 ug/l	

No.	Compound	Result	Group of Compounds
17	Benzo(b)fluoranthene	< 0.100 ug/l	
18	Benzo(a)pyrene	< 0.100 ug/l	
	Acenaphthene	< 0.100 ug/l	
	Pyrene	< 0.230 ug/l	
	Anthracene	< 0.100 ug/l	
	Fluorene	< 0.100 ug/l	
	Phenanthrene	**0.137ug/l**	
	Benzo(a)anthracene	< 0.100 ug/l	
		0.548 ug/l	**Total PAH's (16)**
19	Di(2-ethylhexyl)phthalate (DEHP)	< 40 ug/l	**Plasticisers**
	Diethyl Phthalate	< 20.0 ug/l	
20	Isodrin	< 15 ng/l	**Pesticides**
21	Dieldrin	< 18 ng/l	
22	Diuron	< 0.50 ug/l	
23	Isoproturon	< 0.50 ug/l	
24	Atrazine	< 0.057 ug/l	
25	Simazine	< 0.072 ug/l	
26	Glyphosate	< 2.0 ug/l	
27	Mecoprop	< 0.16 ug/l	
28	2,4-D	< 0.20 ug/l	
29	MCPA	< 0.20 ug/l	
30	Linuron	< 0.50 ug/l	
31	Dichlobenil	< 9 ng/l	
32	2,6-Dichlorobenzamide	N/A	
	Diazinon	< 0.024 ug/l	
	Dimethoate	< 0.020 ug/l	
33	PCB's (Sum of 7)	< 0.070 ug/l	**PCB's**
34	Phenols	**163 ug/l**	**Phenols**

No.	Compound	Result	Group of Compounds
	m,p- Methylphenol	**381 ug/l**	**Cresols**
	o- Methylphenol	< 20 ug/l	
35	Lead (Total as Pb)	**13 ug/l**	**Metals**
36	Arsenic (Total as As)	**2.8 ug/l**	
37	Copper (Total as Cu)	**71 ug/l**	
38	Zinc (Total as Zn)	**267 ug/l**	
39	Cadmium (Total as Cd)	< 0.6 ug/l	
40	Mercury (Total as Hg)	**0.037 ug/l**	
41	Chromium (Total as Cr)	**9 ug/l**	
42	Selenium (Total as Se)	**1.1 ug/l**	
43	Antimony (Total as Sb)	< 1.6 ug /l	
44	Molybdenum (Total as Mo)	**19 ug/l**	
45	Tin (Total as Sn))	< 7.0 ug/l	
	Organo-Tin	< 0.6 ug/l	
	Tributyl Tin	< 0.6 ug/l	
46	Barium (Total as Ba)	**47.4 ug/l**	
47	Boron (Total as B)	**0.24 mg/l**	
48	Cobalt (Total as Co)	**0.002 mg/l**	
49	Vanadium (Total as V)	< 4.00 ug/l	
50	Nickel (Total as Ni)	**11 ug/l**	
51	Fluoride (as F)	0.7 mg/l	**General**
52	Chloride	614 mg/l	
53	TOC	N/A	
54	Cyanide	< 9 ug/l	
55	Sulphate (Total as SO4)	118 mg/l	
	(Sample 1909135)		
56	Conductivity	2196 uS/cm (20 degrees C)	**Additional Tests**

No.	Compound	Result	Group of Compounds
57	Hardness (mg/l CaCO3)	N/A	
58	pH	7.3	

Summary of Influent Lines Screening Results 2021:

2021 – Influent Lines - Sample References 1909412, 1909413, 1909414 and 1909415 all sampled on 01/12/2021

To isolate the source of parameters detected in the Influent, samples were taken from the 4 main influent feeder lines on 01/12/21 as follows:

- 1909412 : Dun Laoghaire – West Pier
- 1909413 : Dodder Valley Sewer - UCD FM-10
- 1909414 : North Dublin Drainage System – Sutton Sump
- 1909415 : Ringsend – Main Lift Pumping Station

See **Table 7.2.4.** These samples were tested for the PRTR test suite. Many of the parameters in the influent feeder line samples were reported as below the detection limit.

Parameters detected in the 4 feeder lines have been compared with those detected in the influent sample (see **Table 7.2.3** above).

1909412 : Dun Laoghaire – West Pier

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (4.44 ug/l).

The BTEX compound Toluene was detected at 1.66 ug/l.

Phenols (154 ug/l) and the cresol m,p-Methyl Phenol (129 ug/l) were detected in this sample.

The metals Lead (10 ug/l), Arsenic (3.1 ug/l), Copper (80 ug/l), Zinc (152 ug/l), Mercury (0.034 ug/l), Molybdenum (21 ug/l), Barium (44.3 ug/l) and Nickel (5 ug/l) were detected.

See highlighted parameters **in Table 7.2.4**.

1909413: Dodder Valley Sewer - UCD FM-10

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (5.04 ug/l).

The BTEX compound Toluene was detected at 0.9 ug/l.

Phenols were detected at 127 ug/l and the cresol m,p- Methyl Phenol at 69.5 ug/l.

The metals Arsenic (8.2 ug/l), Copper (54 ug/l), Zinc (131 ug/l), Mercury (0.035 ug/l),Chromium (2 ug//), Selenium (1.1 ug/l), Molybdenum (10 ug/l), Barium (25 ug/l) and Nickel (14 ug/l) were detected.

See highlighted parameters **in Table 7.2.4**.

1909414: North Dublin Drainage System – Sutton Sump

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (4.24 ug/l).

The BTEX compound Toluene was detected at 1.34 ug/l.

Naphthalene was detected at 0.112 ug/l.

Mecoprop was detected at 0.14 ug/l.

Phenols (26.4 ug/l) and the cresol m,p- Methyl Phenol (72.7 ug/l) were detected.

The metals Arsenic (1.4 ug/l),Copper (51 ug/l), Zinc (84 ug/l),Chromium (4 ug/l), Selenium (0.62ug/l), Molybdenum (7 ug/l,) and Barium (36.9 ug/l)) were detected in this sample.

See highlighted parameters in **Table 7.2.4.**

1909415: Ringsend – Main Lift Pumping Station

One parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (5.21 ug/l).

The BTEX compounds Benzene (0.44 ug/l), Toluene (2.05 ug/l), Ethyl Benzene (0.29 ug/l) and Xylenes (0.36 ug/l) were all detected.

The PAHs Naphthalene (1.03 ug/l), Acenaphthene (0.169 ug/l) and Phenanthrene (0.14 ug/l) were detected in this sample.

Phenol (17.7 ug/l) and the cresol m,p-Methylphenol (77.9 ug/l) were detected in this sample.

The metals Arsenic (2.4 ug/l), Copper (37 ug/l), Zinc (176 ug/l), Molybdenum (10 ug/l), Barium (25.7 ug/l), Boron (0.57 mg/l) and Nickel (4 ug/l) were detected.

See highlighted parameters **in Table 7.2.4**

Measures to Reduce Detected Priority Substances

Ongoing reviews of trade effluent licenses and consents are carried out in the catchments upstream of the 4 influent lines to the Ringsend WWTP to reduce detected priority substances.

Table 7.2.4 - EPA Appendix 1 – Ringsend Influent Inflows - 2021 PRTR Screening

EPA Parameters Screened for in 4 Waste Water Influent Lines to the Ringsend WWTP

No.	Compound	1909412 Dun Laoire West Pier	1909413 UCD FM 10 (Dodder)	1909414 Sutton Sump	1909415 Ringsend Main Lift
1.	Benzene	<0.10 ug/l	<0.10 ug/l	<0.10 ug/l	**0.44 ug/l**
2.	Carbon Tetrachloride	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
3	1,2-Dichloroethane	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
4	Dichloromethane	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
	Bromodichloromethane	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
5	Tetrachloroethylene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
6	Trichloroethylene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
7	Trichlorobenzene (1,2,4)	<30 ng/l	<59 ng/l	<15 ng/l	<13 ng/l
8	Trichloromethane	**4.44 ug/l**	**5.04 ug/**l	**4.24 ug/l**	**5.21 ug/l**
9	Xylenes (all isomers)	<0.30 ug/l	<0.30 ug/l	<0.30 ug/l	**0.36 ug/l**
10	Ethyl Benzene	<0.10 ug/l	<0.10 ug/l	<0.10 ug/l	**0.29 ug/l**
11	Toluene	**1.66 ug/l**	**0.9 ug/l**	**1.34 ug/l**	**2.05 ug/l**
12	Naphthalene	<0.10 ug/l	<0.10 ug/l	**0.112 ug/l**	**1.03 ug/l**
13	Fluoranthene	<0.100 ug/l	<0.100 ug/**l**	<0.100 ug/l	<0.100 ug/l
14	Benzo(k)fluoranthene	<0.100 ug/l	<0.100 ug/**l**	<0.100 ug/l	<0.100ug/l
15	Benzo(ghi)perylene	<0.100 ug/l	<0.100 ug/**l**	<0.100 ug/l	<0.100 ug/l
16	Indeno(1,2,3-c,d)pyrene	<0.100 ug/l	<0.100 ug/**l**	<0.100 ug/l	<0.100 ug/l

No.	Compound	1909412 Dun Laoire West Pier	1909413 UCD FM 10 (Dodder)	1909414 Sutton Sump	1909415 Ringsend Main Lift
17	Benzo(b)fluoranthene	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l
18	Benzo(a)pyrene	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l
	Acenaphthene	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l	**0.169 ug/l**
	Pyrene	<0.200 ug/l	<0.140 ug/l	<0.100 ug/l	<0.100 ug/l
	Anthracene	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l
	Fluorene	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l
	Phenanthrene	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l	**0.14 ug/l**
	Benzo(a)anthracene	<0.100 ug/l	<0.100 ug/l	<0.100 ug/l	< 0.100 ug/l
	Total PAH's (16)	<0.200ug/l	<0.140 ug/l	**0.112 ug/l**	**1.34 ug/l**
19	Di(2-ethylhexyl)phthalate (DEHP)	< 20 ug/l	< 20 ug/l	< 16 ug/l	< 20 ug/l
	Di-ethylphthalate	< 10 ug/l	< 10 ug/l	< 8 ug/l	< 10 ug/l
20	Isodrin	<28 ng/l	< 56 ng/l	< 15 ng/l	< 12 ng/l
21	Dieldrin	<34 ng/l	< 68 ng/l	< 18 ng/l	< 14 ng/l
22	Diuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.10 ug/l
23	Isoproturon	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.10 ug/l
24	Atrazine	<0.114 ug/l	< 0.227 ug/l	< 0.057 ug/l	< 0.046 ug/l
25	Simazine	<0.142 ug/l	< 0.283 ug/l	< 0.072 ug/l	< 0.057 ug/l
26	Glyphosate	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l
27	Mecoprop	<0.16 ug/l	< 0.16 ug/l	**0.14 ug/l**	< 0.08ug/l
28	2,4-D	<0.20 ug/l	< 0.20 ug/l	< 0.10 ug/l	< 0.10 ug/l
29	MCPA	<0.20 ug/l	< 0.20 ug/l	< 0.10 ug/l	< 0.10 ug/l
30	Linuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.10 ug/l
31	Dichlobenil	<17 ng/l	< 34 ng/l	< 9 ng/l	< 8 ng/l
32	2,6-Dichlorobenzamide	N/A	N/A	N/A	N/A
	Diazinon	<0.047 ug/l	<0.093 ug/l	<0.024 ug/l	<0.019 ug/l
	Dimethoate	<0.029 ug/l	<0.056 ug/l	<0.020 ug/l	<0.020 ug/l

No.	Compound	1909412 Dun Laoire West Pier	1909413 UCD FM 10 (Dodder)	1909414 Sutton Sump	1909415 Ringsend Main Lift
33	PCB's (Sum of 7)	< 0.136 ug/l	< 0.263 ug/l	< 0.070 ug/l	< 0.059 ug/l
34	Phenols	**154 ug/l**	**127 ug/l**	**26.4 ug/l**	**17.7 ug/l**
34	m,p- Methylphenol	**129 ug/l**	**69.5 ug/l**	**72.7 ug/l**	**77.9 ug/l**
	o- Methylphenol	< 10 ug/l	< 10 ug/l	< 8 ug/l	< 10 ug/l
35	Lead	**10 ug/l**	< 6.0 ug/l	< 6.0 ug/l	< 6.0 ug/l
36	Arsenic	**3.1 ug/l**	**8.2 ug/l**	**1.4 ug/l**	**2.4 ug/l**
37	Copper	**80 ug/l**	**54 ug/l**	**51 ug/l**	**37 ug/l**
38	Zinc	**152 ug/l**	**131 ug/l**	**84 ug/l**	**176 ug/l**
39	Cadmium	<0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l
40	Mercury	**0.034 ug/l**	**0.035 ug/l**	< 0.020 ug/l	<0.020 ug/l
41	Chromium	<2 ug/l	**2 ug/l**	**4 ug/l**	< 2.0 ug/l
42	Selenium	<0.60 ug/l	**1.1 ug/1**	**0.62 ug/l**	< 6.0 ug/l
43	Antimony	<1.6 ug/l	<1.6 ug/l	<1.6 ug/l	< 1.6 ug/l
44	Molybdenum	**21 ug/l**	**10 ug/l**	**7 ug/l**	**10 ug/l**
45	Tin (Total)	<7 ug/l	< 7 ug/l	< 7 ug/l	< 7 ug/l
	Organo Tin	<0.2 ug/l	< 0.2 ug/l	< 0.1 ug/l	< 0.1 ug/l
	Tri-Butyl Tin	<0.2 ug/l	<0.2 ug/l	<0.1 ug/l	< 0.1 ug/l
46	Barium	**44.3 ug/l**	**25 ug/l**	**36.9 ug/l**	**25.7 ug/l**
47	Boron	< 0.23 mg/l	< 0.23 mg/l	< 0.23 mg/**l**	**0.57 mg/l**
48	Cobalt	< 2 ug/l	< 2 ug/l	< 2 ug/l	< 2 ug/l
49	Vanadium	< 4 ug/l	< 4 ug/l	< 4 ug/l	< 4 ug/l
50	Nickel	**5 ug/l**	**14 ug/l**	< 3 ug/l	**4 ug/l**
51	Fluoride	0.7 mg/l	0.5 mg/l	0.5 mg/l	0.7 mg/l
52	Chloride	101 mg/l	80.9 mg/l	89.9 mg/l	1920 mg/l
53	TOC	-	-	-	-
54	Cyanide	< 9 ug/l	< 9 ug/l	< 9 ug/l	< 9 ug/l
55	Sulphate (Total as SO4)	42.7 mg/l	46.3 mg/l	58 mg/l	294 mg/l

No.	Compound	1909412 Dun Laoire West Pier	1909413 UCD FM 10 (Dodder)	1909414 Sutton Sump	1909415 Ringsend Main Lift
		(Sample 1909400)	**(Sample 1909401)**	**(Sample 1909402)**	**(Sample 1909403)**
55	Conductivity	744	715	720	5679
56	Hardness (mg/l CaCO3)	-	-	-	-
57	pH	7.4	7.6	7.6	7.5

Appendix 7.3 - Toxicity Leachate Management Report

Leachate received by tanker at the Ringsend WWTP is managed using a system of application forms, consignment notes, monitoring and invoicing.

Leachate is also discharged to sewer, and this is managed by consent to discharge.

A total volume of **182,216** cubic metres of leachate was received in 2021 as tabulated below:

Landfill Source	**Local Authority**	**Leachate Annual Volume 2021 (m^3)**	**Daily PE Load (using volume)**	**Daily % Influent PE Load***
Ballynagran (by tanker)	Wicklow County Council	15,507	189	0.0102%
Kerdiffstown (by tanker)	Kildare County Council	14,056	171	0.0092%
Bord Na Mona Drehid Landfill (by tanker)	Kildare County Council	5,002	61	0.0033%
Knockharley Landfill (by tanker)	Meath County Council	4,158	51	0.0027%
Dunsink (to sewer)	Fingal County Council	128,893	1,569	0.0844%
Arthurstown (to sewer)	South Dublin County Council	14,600	178	0.0096%
Total		**182,216**		**0.12%**

The daily leachate PE load represents **0.12 %** of the average daily calculated PE load in 2021 (**1,859,465 PE**)

Appendix 7.4 - Final Effluent Toxicity Assessment

See attached Effluent Toxicity Report for a sample 1909234 taken on 01/12/21.

This sample complied with the EPA WWTP Licence.

Toxicity Testing Report on behalf of TMS Environment Ltd.

Sampling Date – 01st December 2021

Sample Details

TMS Environment Limited requested toxicity testing on behalf of their client, Dublin City Council, on their final effluent in December 2021.

The customer collected a composite sample over a 24 hour period on Wednesday, the 01st of December, and the sample was received by Enva on Thursday the 2nd of December.

The sample was labelled as "Ringsend Effluent 01.12.21.", and was to be tested on the following species;

- 30 Minutes EC50 to *Vibrio fischeri*
- 48 Hours LC50 to *Brachionus Plicatilis*

Methods

Method 1: ENVCM.136: Based on ISO 11348-3:2007 Determination of the inhibitory effect of water sample on the light emission of *Vibrio fischeri*.

ISO 11348 describes three methods for determining the inhibition of the luminescence emitted by the marine bacterium *Vibrio fischeri* (NRRL B-11177). ISO 11348-3:2007 specifies a method using freeze-dried bacteria.

This method is applicable to waste water, fresh water (surface and ground water), sea and brackish water.

Method 2: ENVCM.137: Rotifer *Brachionus plicatilis*: Based on ASTM E1440-91.

This guide describes procedures for obtaining laboratory data concerning the acute toxicity of chemicals and aqueous effluents released into estuarine or marine waters. Acute toxicity is measured by exposing *Brachionus* newly hatched from cysts to a series of toxicant concentrations under controlled conditions.

The *Brachionus plicatilis* rotifer is specific to sea and brackish water.

Client Information

Contact Name	Marian Brady	**Address**	TMS Environment Ltd, 53, Broomhill Drive, Tallaght, Dublin 24

Certification Details

Certificate Number	214824018012022	**Enva Lab ID**	2148240
Date Received	02nd December 2021	**Certificate Date**	18th January 2022
Order Number	N/A	**Test Date**	03rd December 2021

Sample Information

Sampled By	Customer
Sampling Procedure	Composite
Storage Conditions	Refrigerated
Temperature (°C)	22
pH (at 25°C)	7.56
Dissolved Oxygen (mg/L)	6.85
Dissolved Oxygen (% Saturation)	80.1
Conductivity (µs/cm at 25°C)	1907
Salinity (ppt at 20°C)	0.7

Aquatic Toxicity Test Results

Test Parameters	Concentration (% Vol./Vol.)	Toxic Units	95% Confidence Limits (% Vol./Vol.)	Method of Calculation
30 min EC50 to *Vibrio fischeri*	100	**<1**	N/A	Microtox
48 LC50 to *Brachionus plicatilis*	100	**<1**	N/A	Rotifer LC50 Calculation Programme

Conclusions

All tests performed were deemed to be valid as they met all of the criteria specified in the guidelines.

Reported By

Alan O'Driscoll

Alan O'Driscoll

Account Manager

Enva Ireland, Cork

Appendix 7.5 - Met Eireann Orange and Red Alerts affecting Ringsend WWTP

There were no samples discounted because of Met Eireann Orange and Red Alerts in 2021.