

Annual Environmental Report

2022



Ringsend

D0034-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 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 BOD) mg/l COD mg/l TSS mg/l Total Phosphorus (as P) mg/l Total Nitrogen mg/l

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	141	446	259
COD-Cr mg/l	245	1145	533
Suspended Solids mg/l	244	585	240
Total Nitrogen mg/l	101	58	42
Total Phosphorus (as P) mg/l	101	8.57	5.28
Hydraulic Capacity	N/A	854,201	435,489

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 (<i>Schedule A</i>)	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	141 **	245***	247***	101 *	101 *	245***	1	Composite samples taken except for toxicity
Number of sample results above WWDL ELV	70	103	169	101	94	0	0	
Number of sample results above ELV with Condition 2 Interpretation included	30	40	75	101	90	0	0	
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	4.28	19.11	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.

**141-155 samples therefore 12 non-compliant results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.

***236-251 samples therefore 18 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 2022

	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 (<i>Schedule A</i>)	-	-	-	-	100,000	-	-	
ELV with Condition 2 Interpretation included	-	-	-	-	120,000	-	-	
Number of sample results	245	245	245	99	51* (SPOT)	43* (SPOT)	191	*Licence specifies 1 st May to 31 st August for E. Coli compliance
Number of sample results above WWDL ELV/not achieving min % reduction	-	-	-	-	0	-	-	Composite sample taken for chemistry parameters
Number of sample results above ELV with Condition 2 Interpretation included	-	-	-	-	0	-	-	
Annual Mean (for parameters where a mean ELV applies)	-	-	-	-	-	-	-	
Overall Compliance (Pass/Fail)	N/A	N/A	N/A	N/A	PASS	N/A	N/A	No samples exceeded 100,000 MPN/100ml during the specified period (01/05/22 - 31/08/22)

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 70 samples non-compliant with the ELV in relation to cBOD. The non-compliance is due to overloading. There were 103 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 101 samples non-compliant with the ELV for TP. The non-compliance was due to no P removal treatment on site. There were 94 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 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.

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

Discounting of Results:

There were 3 no. dates where results were discounted in 2022 due to Poor Weather Conditions *i.e.*, 15/08/2022, 19/10/2022 and 27/10/2022.

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 (2016-2021)	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	Poor	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	Moderate	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	Poor	Yes

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status (2016-2021)	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
								Impacts of the sewage discharge plume and the Tolka River inflow – See Section 2.1.3.1 below. Tolka Estuary is tidal.
Downstream monitoring points	Dublin Bay	Unknown	No	No	No	No	Good	No. See Section 2.1.3.1 below.
Downstream monitoring points	Designated Bathing Waters Dollymount Bathing Zone Sandymount	Unknown	Yes	No	No	No	2022 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-RINGSSEND 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 WWTP does not have an observable negative impact on the Water Framework Directive status in the Liffey Estuary.
- 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 to 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 2022 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 **2022** are tabulated below:

Survey No. and Month 2022	Date	High Tide Time	Height (m OD)	Low Tide Time	Height (m OD)	Tidal Status during Survey
1. April	28/04/22	11.05	3.89	16.51	0.59	High to Ebb
2. May	26/05/22	09.42	3.78	15.36	0.85	High to Ebb
3. June	23/06/22	08.06	3.71	14.03	1.06	Mid Ebb to Low
4. July	13/07/22	11.57	4.01	17.36	0.67	High to Mid-Ebb
5. August	25/08/22	11.37	3.56	17.19	1.22	High to Mid-Ebb
6. September	21/09/22	09.42	3.27	15.37	1.64	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 2022 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**.

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

- **ASW 2S** – on 28/04/22 (BOD = 6 mg/l) and on 23/06/22 (BOD = 4mg/l)
- **ASW 3S** - on 28/04/22 (BOD = 6 mg/l)
- **ASW 8S** – on 28/04/22 (BOD = 4 mg/l)

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

- **ASW 10S** – (7.8 mg/m³)

Data showed compliance with Temperature, Dissolved Oxygen (lower) and Dissolved Oxygen (upper) at all locations on all survey dates except for:

ASW 10S - on 23/06/22 (DO Lower = 68% Sat.)

Exceedances of median Molybdate Reactive Phosphate (MRP) standards occurred in the near field of the Ringsend discharge at ASW2, ASW3, ASW4 and at ASW 10S (Surface samples).

The non-compliant median MRP results were as follows :

Location	MRP 2022 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)	262.5 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW3 (Surface)	170.5 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW4 (Surface)	72.5 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW10 (Surface)	91 ug/l as P		Outside the Mixing Zone Upstream River Pollution

2.1.3.1.2 Marine Monitoring – 2022 - 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 2022, 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 O₂ at:

- **DB 410 (Surface)** on 28/04/2022 (**4 mg/l**)
- **DB 320 (Depth)** on 28/04/2022 (**4 mg/l**) and 25/08/2022 (**5 mg/l**)

Median Chlorophyll was noted as follows :

- **DB 020 (Depth) – 5.5 mg/m³**
- **DB 300 (Surface) – 6.3 mg/m³**
- **DB 320 (Surface) – 5.2 mg/m³**
- **DB 350 (Composite) – 5.3 mg/m³**

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

Location	MRP 2022 Median Result	S.I. No. 272 of 2009 (as amended) / S.I. No. 77 of 2019	Comment
		< 40ug/l P(med) < 60 ug/l P (med)	
	Tolka		
DB 300 (Surface)	61.2 ug/l P		Upstream riverine impacts
	Tolka Estuary		
DB320 (Surface)	80 ug/l P		SW1 Discharge and riverine impacts
DB320 (Depth)	73 ug/l P		SW1 Discharge and riverine impacts
DB330 (Surface)	75 ug/l P		SW1 Discharge and riverine impacts
DB330 (Depth)	63 ug/l P		SW1 Discharge and riverine impacts
DB330 (Composite)	106 ug/l P		SW1 Discharge and riverine impacts
DB350 (Composite)	61.5 ug/l P		SW1 Discharge and riverine impacts

2.1.3.1.3 Marine Monitoring – Dublin Bay, 2022- Points Agreed with the EPA

A total of 4 surveys were carried out at 9 locations in Dublin Bay during 2022 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 2022 shows full compliance with Temperature, Dissolved Oxygen (lower) and Dissolved Oxygen (upper).

The median Chlorophyll Good to Moderate limit (< 5.0 ug/l) was complied with at all 9 sampling locations in 2022.

The Dissolved Inorganic Nitrogen (DIN) standards for coastal waters (High Status) were complied with at all 9 of the sampling locations on all survey dates.

There were **no other measured impacts** on regulated coastal and Irish Sea water quality during 2022.

2.1.3.1.4 Shoreline Monitoring – 2022 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 2022 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 came into place in 2020 due to Poor water quality. It had been classified as Poor status for five consecutive years (2015 to 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, two 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 2022. 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). Note also the widespread occurrences of Ectocarpus at Shellybanks (405-42) and the occasional occurrences at ASW 17 (Sandymount Strand) and ASW 18 (Merrion Strand).

Designated bathing water at Dollymount (Bathing Zone) will be allocated **GOOD status** in 2022 (predictive)

Designated bathing waters at Sandymount will be allocated **SUFFICIENT status** in 2022 (predictive).

Site Location	ASW 12	ASW 17
No. of samples	19	19
2022 Annual Status (predicted)	Good	Sufficient

The remaining 6 locations monitored are not designated bathing waters.

Monitoring data for non-designated bathing waters between 13/06/22 and 13/09/22 is included in **Appendix 7.1.5**.

2022 - 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	41,013,465	5,318,075	87
TP	848,910	681,048	20
TN	6,720,529	3,020,447	55
SS	38,073,010	12,680,343	67
COD	84,420,068	24,412,859	71

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 (m³/day) - As Constructed	959,040
DWF to the Treatment Plant (m³/day)	397,440
Current Hydraulic Loading - annual max (m³/day)	854,201
Average Hydraulic loading to the Treatment Plant (m³/day)	435,489
Organic Capacity (PE) - As Constructed	1,640,000
Organic Capacity (PE) - Collected Load (peak week)^{Note1}	2,207,592
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	No

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

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 p.e 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*	221	m ³ /yr	2.7	0.00015%	Yes	Yes	Yes
Industrial / Commercial Sludge	21,924	m ³ /yr	267	0.0245%	Yes	Yes	Yes
Landfill Leachate (delivered by tanker) – Ballynagran Landfill – Wicklow County Council	17,620	m ³ /yr	215	0.0117%	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Kerdiffstown Landfill – Kildare County Council	13,048	m ³ /yr	159	0.0086%	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Knockharley Landfill – Meath County Council	4,303	m ³ /yr	52	0.0028%	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Drehid Landfill Bord Na Mona Wicklow County	4,703	m ³ /yr	57	0.0031%	Yes	Yes - Tanker Waste Consignment Note System	Yes

Input type	Quantity	Unit	p.e. **	% of p.e 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)
Council							

*Domestic Tankers include only loads from residential/domestic sources and excludes loads from construction sites / offices / nursing homes / army barracks.

** PE = m³/year /0.225 x365

*** % PE Load to WWTP = Daily Leachate PE/ Mean Daily Influent PE X100 (*Mean Daily Influent 1,839,660*)

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

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

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
10	Discharge to Waters	5	5

3.2 REPORTED INCIDENTS SUMMARY

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

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Other	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

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
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 maintenance at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
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	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 maintenance at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment maintenance at WWTP	1	No	No
Abatement Equipment offline	Plant or equipment maintenance at WWTP	1	No	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	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	Yes
Abatement Equipment offline	Plant or equipment maintenance 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	Yes
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No
Other	Blocked Sewer	1	No	Yes
Spillage	Shock load to the WWTP	1	No	Yes
Uncontrolled release	SWO Design not meeting DoEHLG Criteria	1	Yes	No
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Network Infrastructure	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	EO caused by ragging or blocking	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	Blocked Sewer	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	Blocked Sewer	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	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	SWO Design not meeting DoEHLG Criteria	1	No	Yes
Uncontrolled release	Network Infrastructure	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	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	EO caused by pump failure	1	Yes	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes

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

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	No
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Inadequate Operational Procedures / Training	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Broken Sewer Pipe	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2022	101
Number of Incidents reported to the EPA via EDEN in 2022	101
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 2022 (No. of events)	Total volume discharged in 2022 (m ³)	Monitoring Status
SW221	308266	238795	No	TBC	Meeting Criteria	Unknown	Unknown	Not Monitored
SW006	328809	239332	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW007	TBC	TBC	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW008	315806	SW234287	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW009	310802	234027	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW011	319626	231454	No	Low	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW012	317841	231305	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW018	321035	237501	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW019	TBC	TBC	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW022	317876	231362	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW223	314663	234256	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW222	314770	234224	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW315	307075	251832	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW024	300952	228944	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW030	313784	234376	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW031	313950	234334	No	Low	Meeting Criteria	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW241	306983	232223	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW164	TBC	TBC	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW032	315008	238091	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW033	315490	237190	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW034	315547	238945	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW036	315305	237279	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW038	318138	233413	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW039	309308	243140	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW154	317907	232490	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW040	317783	231214	No	Low	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW260	317559	230769	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW041	TBC	TBC	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW043	313784	234376	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW055	313950	234334	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW227	315554	234205	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW228	315554	234205	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW380	321210	229754	No	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW310	308317	238763	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW094	310354	232477	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW229	316176	236728	Yes	Low	Not Meeting Criteria	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW056	315406	237212	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW230	316056	236694	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW231	313520	233817	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW058	315555	229630	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW064	315554	234205	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW065	312973	234349	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW073	324182	240117	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW076	317767	231216	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW155	317819	231629	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW081	320450	237731	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW082	326418	227760	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW014	316024	234381	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW013	316105	234409	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW083	TBC	TBC	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW087	323855	243157	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW318	305932	252223	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW240	307319	231706	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW088	311465	227360	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW313	308725	237713	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW090	321966	243115	No	TBC	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW322	306330	246270	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW091	307843	242672	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW093	317773	234389	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW098	317773	234389	No	Low	Meeting Criteria	Unknown	Unknown	Monitored
SW015	314901	234189	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW099	313965	237987	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW016	316859	234350	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW100	318536	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW101	318537	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW102	318360	236020	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW104	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW017	312965	234299	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW105	312963	234299	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW020	316949	236161	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW021	316949	236161	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW108	319046	237214	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW109	319027	237330	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW110	318536	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW111	318537	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW112	318360	236020	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW113	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW114	321441	236397	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW115	321200	236110	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW116	319132	235882	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW117	319457	235872	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW118	320108	235760	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW156	318206	233243	Yes	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW119	311751	242253	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW120	327250	226590	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW121	327228	226665	No	Low	Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW122	327229	226664	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW123	326943	226990	No	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW124	313520	233817	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW125	315435	229529	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW126	314837	229650	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW127	322644	226837	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW023	315554	234205	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW128	316347	229997	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW129	311491	232877	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW130	317178	230638	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW131	328480	236570	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW132	317371	233630	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW096	317371	233630	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW133	313787	232639	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW134	311477	231827	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW135	316204	236747	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW136	316204	236747	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW137	316206	236747	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW138	313218	241541	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW139	314010	237630	No	TBC	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW140	TBC	TBC	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW141	316983	229353	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW142	TBC	TBC	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW025	316112	234461	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW159	317767	231216	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW160	318206	233243	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW026	314412	234306	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW027	314583	234281	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW097	319374	230609	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW143	319379	230609	No	Low	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW233	309737	229577	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW028	312634	233620	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW144	320450	237731	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW145	317026	234334	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW250	304031	234473	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW029	315554	234205	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW146	317371	233630	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW147	317364	235905	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW148	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW149	317364	235905	No	Low	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW150	317934	235787	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW151	317934	235787	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW152	316969	229568	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW153	313368	233724	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW157	TBC	TBC	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW163	309385	234985	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW165	314122	237517	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW166	313965	237987	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW167	313965	237987	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW168	313965	237987	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW277	321210	229754	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW169	303875	234406	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW171	315275	237269	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW172	313965	237987	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW174	311465	227360	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW175	310202	227489	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW176	322397	241382	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW253	303187	232242	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW177	321151	238304	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW178	315433	234241	No	Low	Not Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW179	323171	238445	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW180	315490	237190	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW181	315908	236816	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW182	313990	238023	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW035	317180	234439	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW183	317180	234439	No	Low	Meeting Criteria	Unknown	Unknown	Monitored
SW184	328727	239275	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW185	330124	238941	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW186	328408	239387	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW187	328409	239386	No	Low	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW188	320812	238468	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW189	317371	233630	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW092	317371	233630	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW037	317026	234334	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW190	316204	236747	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW191	316206	236747	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW192	TBC	TBC	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW193	318360	236020	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW194	317934	235787	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW195	321376	238205	No	Low	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW196	320455	237732	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW197	TBC	TBC	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW198	327824	239459	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW199	330124	238941	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW381	312635	228182	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW200	321568	229551	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW202	307000	231632	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW203	321760	229236	No	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW204	323389	228326	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW205	312064	233584	No	Low	Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW206	313784	234376	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW207	313950	234334	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW208	312691	234330	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW209	316204	236747	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW210	316206	236747	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW211	322859	238111	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW212	315554	234205	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW213	314332	234276	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW214	315554	234205	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW215	315554	234205	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW216	317236	234312	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW252	309029	234536	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW217	313965	237987	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW218	323643	238760	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW321	306676	245813	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW317	TBC	TBC	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW003	318360	236020	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW219	318536	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW220	318537	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW224	317934	235787	No	TBC	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW201	313218	233704	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW161	314590	231740	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW225	314591	231741	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW162	314590	231740	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW226	314591	231741	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW242	313337	230411	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW234	315522	229162	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW235	321210	229754	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW249	303236	235040	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW236	309007	234984	No	Low	Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW237	309745	234945	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW248	302515	235033	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW238	310274	234420	No	Low	Meeting Criteria	Unknown	Unknown	Monitored
SW243	324677	240377	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW244	324678	240376	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW245	TBC	TBC	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW246	321806	229409	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW247	TBC	TBC	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW254	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW255	316855	234470	No	Low	Meeting Criteria	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW042	314987	234137	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW262	319999	230505	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW256	315929	236821	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW382	316940	229709	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW316	307311	251743	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW044	313368	233724	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW257	323389	228326	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW259	323970	241500	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW261	316988	229386	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW103	311120	232005	Yes	Low	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW264	301289	228845	No	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW265	323352	228938	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW266	325185	228054	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW267	325187	228053	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW095	321500	233812	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW268	313784	234376	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW269	313950	234334	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW270	313784	234376	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW271	313950	234334	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW272	313784	234376	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW273	313950	234334	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW089	317773	234389	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW274	318360	236020	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW275	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW278	318360	236020	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW279	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW280	323171	238445	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW281	317371	233630	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW282	310265	232072	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW283	307051	231535	No	Low	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW284	302134	234884	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW286	314692	237504	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW287	321760	229236	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW288	317371	233630	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW289	315554	234205	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW290	321439	236403	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW291	315554	234205	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW292	317371	233630	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW293	313787	232639	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW045	316949	236161	Yes	Low	Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW046	315554	234261	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW047	315724	234308	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW049	315137	234174	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW048	315281	234204	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW294	315590	229790	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW295	317773	234389	No	Low	Not Meeting Criteria	Unknown	Unknown	Monitored
SW296	318619	235576	No	Low	Not Meeting Criteria	Unknown	Unknown	Monitored
SW297	321236	238279	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW050	313784	234376	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW379	317371	233630	No	Low	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW298	317371	233630	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW004	316697	230050	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW299	316783	230085	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW051	315554	234205	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW052	315554	234205	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW383	317876	232454	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW232	312883	230161	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW300	316883	236235	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW301	317364	235905	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW302	317934	235787	No	TBC	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW303	317068	236034	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW304	317075	236033	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW305	317076	236033	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW251	306892	235464	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW306	323558	242487	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW258	301891	226887	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW307	301894	226899	No	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW308	314477	229675	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW309	314477	229675	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW320	314477	229675	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW323	314150	228975	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW324	TBC	TBC	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW319	302655	251599	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW263	TBC	TBC	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW312	308002	238731	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW325	316957	236176	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW053	317977	233864	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW002	320338	233836	No	TBC	Not Yet Assessed	32	1,834,086	Monitored
SW326	311866	237873	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW311	309614	238261	Yes	TBC	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW314	TBC	TBC	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW327	320902	229956	No	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW328	318389	229640	No	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW054	309745	234945	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW329	TBC	TBC	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW330	314477	229675	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW331	312990	233664	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW384	312988	233664	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW057	313023	233673	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW332	313021	233673	No	Low	Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW059	313061	233674	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW333	321360	235820	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW334	306820	232100	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW060	314246	234315	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW335	321203	236120	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW336	321192	236113	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW276	320902	229956	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW170	317891	232503	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW337	317364	235905	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW338	317934	235787	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW061	315554	234205	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW062	315554	234205	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW158	317858	231356	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW063	317396	234297	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW339	317392	234298	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW340	317552	234407	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW341	318360	236020	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW342	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW343	303822	235710	No	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW344	319767	230085	No	Low	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 DoEHGL Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW385	319938	230443	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW067	313728	234294	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW066	313728	234294	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW068	310369	234145	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW069	310371	234144	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW345	310359	234150	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW072	310501	234093	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Monitored
SW070	310802	234027	Yes	Low	Meeting Criteria	Unknown	Unknown	Monitored
SW071	310261	234248	Yes	Low	Meeting Criteria	Unknown	Unknown	Monitored
SW346	312318	233651	No	Low	Not Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW347	308532	231438	No	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW348	323643	238760	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW349	310802	234027	No	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW106	319626	231454	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW239	311477	231827	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW350	319554	239913	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW351	317773	234389	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW352	318619	235576	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW353	TBC	TBC	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW354	TBC	TBC	No	Low	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW355	324798	244337	No	High	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW074	318619	235576	Yes	Low	Meeting Criteria	Unknown	Unknown	Monitored
SW356	326155	239718	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW357	330124	238941	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW358	TBC	TBC	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW359	330124	238941	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW360	317087	240688	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW361	318536	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW362	318537	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW363	318360	236020	No	TBC	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW364	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW365	321210	229754	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW366	314477	229675	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW285	323352	228938	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW367	302532	235061	No	TBC	Not Yet Assessed	Unknown	Unknown	Monitored
SW075	312548	233667	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW368	311646	233095	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW077	311766	233209	Yes	Low	Meeting Criteria	Unknown	Unknown	Not Monitored
SW369	318536	236153	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW370	318537	236153	No	TBC	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 DoEHLC Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW371	318360	236020	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW372	317934	235787	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW078	314493	234254	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW079	314688	234206	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW373	321192	236113	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW386	314205	234280	No	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW080	314332	234276	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW374	317371	233630	No	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW375	322347	237561	No	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW376	313965	237987	No	Low	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 2022 (No. of events)	Total volume discharged in 2022 (m³)	Monitoring Status
SW005	324033	229855	Yes	TBC	Meeting Criteria	Unknown	Unknown	Not Monitored
SW010	323400	228973	Yes	Low	Meeting Criteria	Unknown	Unknown	Monitored
SW173	316935	230487	Yes	TBC	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW377	312241	229791	No	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW107	318104	232847	Yes	Low	Not Yet Assessed	Unknown	Unknown	Not Monitored
SW378	324957	228322	No	Low	Not Yet Assessed	Unknown	Unknown	Monitored
SW084	313950	234334	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW085	315142	234128	Yes	Low	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW086	315142	234128	Yes	Low	Meeting Criteria	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 (m³)?**

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	22 nd December 2015	Yes	Part-commenced	<p>The project comprises four key elements and underpinning these is a substantial programme of ancillary works:</p> <ul style="list-style-type: none"> • Provision of additional secondary treatment facility capacity with nutrient reduction (400,000 p.e.). • Upgrade of the 24 existing secondary treatment tanks to provide additional capacity and nutrient reduction, which is essential to protect the 	<p>The overall Upgrade Project works are expected to take until the end of 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) as well as growth of loading in the catchment.</p> <p>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</p>

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
					<p data-bbox="1323 331 1615 387">nutrient-sensitive Dublin Bay area.</p> <ul data-bbox="1290 403 1637 571" style="list-style-type: none"> <li data-bbox="1290 403 1592 499">• Provision of a new phosphorous recovery process; and <li data-bbox="1290 515 1637 571">• Expansion of the plant's sludge treatment facilities. <p data-bbox="1267 595 1603 715">The 400,000 p.e. Capacity Upgrade Design Build (DB) contract is completed and in operation.</p> <p data-bbox="1267 738 1671 1342">An Bord Pleanála granted planning permission for the further upgrade of the plant 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. Upgrade of the 24 existing secondary treatment with Aerobic Granular Sludge (AGS) technology to provide additional capacity and nutrient reduction: the strategy for the works to retrofit the AGS technology to the existing secondary treatment tanks is based on achieving compliance at the earliest stage possible utilising the technology</p>	<p data-bbox="1695 331 2119 515">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 standards).</p>

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
					<p>as effectively and efficiently as possible.</p> <p>Works to upgrade the tanks with AGS technology commenced on a phased basis in November 2020 and are progressing to schedule. The first phase of the Hybrid Retrofit works was completed in Q4 2021. Phase 2 of the Hybrid Retrofit works is scheduled to commence in Q3 2023, subject to receipt of capital consent. Block 2 works are now significantly advanced and currently on schedule for completion Q4 2023 with Block 3 works progressing in parallel and scheduled for completion Q2 2024.</p> <p>The phosphorus recovery facility works contract commenced in Q1 2021 with construction and trial operation period successfully completed in Q1 2023</p> <p>Upgrades to sludge treatment facilities have been progressing incrementally since 2020. Initial upgrades to sludge treatment facilities have been completed,</p>	

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
					with further sludge line enabling works commenced in Q4 2021 and completed in Q1 2023. The remaining sludge line upgrade is progressing to plan with construction commencing in Q2 2023. An interim stage in the project is to bring the plant into capability to produce a complaint effluent, based on a load of 2.1 million p.e, scheduled for the end of 2023.	
Upgrade storm water storage tank at WWTP as necessary	C.1	22 nd 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.
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.	Elements of upgrades are occurring. Note projects such as Eden Quay siphon upgrade progressed in 2022. Critical Assets surveys progressed to survey in 2022.
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
(D0034-SIP:01) Discharge S4 Fingal to the Irish Sea to be discontinued	A.3	31/12/2011	Yes	Proceeding to detailed design.	2024	Planning consents progressed and were submitted in 2022. Planning received Jan 2023. Target completion dates are subject to change pending successful completion of the relevant statutory processes.

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)	<p>End 2023 – scheduled completion of interim works to enable the production of a compliant effluent for 2.1 million p.e.</p> <p>End 2025 – scheduled completion of final works to upgrade WWTP to a capacity of 2.4 million p.e.</p> <p>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 standards).</p>	
Main Lift Pumping Station Catchment DAP -Rathmines & Pembroke -Crumlin/Drimnagh/Bluebell	Survey & Assessment of Wastewater Network		2025	Flow surveys complete and Model Build in progress – Ongoing. Advanced assessment and model build carried out in Crumlin for flood investigation. Currently at optioneering stage.

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
<p>Sutton Pumping Station Catchment DAP</p> <ul style="list-style-type: none"> -North Fringe -North Dublin Drainage Scheme (NDDS) 	<p>Survey & Assessment of Wastewater Network</p>		<p>2026</p>	<p>Surveys currently ongoing. Project delays due to Covid-19 restrictions. In 2022 Project splitting and Advancement of key areas for growth on the North Fringe sewer earmarked. Assessment of flows from Dublin airport completed as part of advanced works. Future growth assessments for the NFS catchment are being delivered with the aim to claw back time in the critical growth areas.</p>
<p>Main Lift Pumping Station Upgrade Works</p>	<p>Upgrade to MLPS (Civil & M&E Works including pumps and panel replacements)</p>		<p>2023</p>	<p>Civil & M&E Works including pumps and panel replacement complete. Additional Works have been identified to replace the two existing Inverted Syphons due for completion Q4 2022. One no. siphon works under way in 2022. One no. siphon pushed to 2023 as an additional panel took priority in works programme that was</p>

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
				not included for in original scope.
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. Still on track.
Dodder Valley Sewers DAP	Survey & Assessment of Wastewater Network		2023	Asset Surveys complete. Stage 3 assessment due for completion 2023 Still on track.
Newcastle Local Network Reinforcement Project	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater catchment plan completed 2022	Separate alternative Project being progressed to service Newcastle area. Alternative servicing implemented with developer. Upgrade of Newcastle WWPS for equipment replacement and optimisation to be completed in Q3 2023 / Q1 2024 as a result of the catchment assessment.	Wastewater catchment plan completed 2022.

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	Completed	Works for the new 450mm sewer were completed as of September 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 Overall DAP still on track. As per above note key areas are being advanced in 2023 to interim model build and catchment growth assessment to the development of projects in critical growth areas.
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	Construction completed. Currently under commissioning phase.
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 Pleanála (ABP) planning refusal. Subsequent Planning delays - still awaiting appeal decision.

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
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	Moreen (Sewer Upgrade at Drummartin Link Road Junction: Q3 2025)
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.	Sandyford/Stillorgan WW Upgrade (Stillorgan reservoir site storage & associated WW Upgrades in the general Sandyford Business Park area): Q3 2027 Sandyford WW Upgrades (Storage South of M50 and associated upstream WW Upgrades): Q2 2026
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	2024	Contractor has been appointed and site investigations underway. Works at this location are expected to be completed by Q1 2024.
West Pier Pumping Station Catchment DAP - West Pier East	Survey & Assessment of Wastewater Network	Not Applicable	2023	Asset Surveys complete. Stage 3 assessment due for completion 2023 – On track.

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
- West Pier West				

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
A new radio signal system in Ashbourne, Kilbride & Ratoath pump stations.	Installation of a new radio signal system in the Ashbourne, Ratoath and Kilbride pumping stations which when complete will provide a robust alarm system for the pumping stations and help 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	<p>On-going review of licenced discharges to sewers in the catchment of Ringsend WWTP.</p> <p>Priority substances detected in effluent should have no negative impacts outside the near field of the discharge due to dilution. See Appendix 7.2.</p>
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5.2 TOXICITY/LEACHATE MANAGEMENT

The Toxicity of Toxicity/Leachate Management Report 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 **123,924** cubic metres. This constitutes 339 cubic metres per day (0.078 % v/v) based on the 2022 mean daily influent volume of 435,489 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	EPA Initiated Review
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	N/A
List reason e.g., changes to monitoring requirements	N/A
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

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

Date: 07/06/2023

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

Eleanor Roche

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

Dublin



Appendix 7.1.1 Dublin Ambient Sampling Points Map

Appendix 7.1.2 Transitional Water Body Monitoring 2022 ASW2 - ASW10

Report for Samples Taken During the Period: 01/01/2022 - 31/12/2022

at 09/01/2023

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 ug/l N	Dissolved Oxygen LOW % Sat.	Dissolved Oxygen HIGH % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Phosphorus (React) µg/l SRP as P	Salinity PSU	Silica µg/l as SiO2	Temperature °C	TON µg/l as N		
							<p>Surface Water Objectives for Transitional Water Bodies SI 272 of 2009 as amended by SI 77 of 2019</p> <p>Compliant</p> <p>Non-Compliant</p>														
							HIGH <3.0 mg/l (95%-ile) GOOD < 4 mg/l (95%-ile)	HIGH-GOOD 2.5 median GOOD-MODERATE 5.0 median		HIGH 0 - 17 % PSU 95%-ile > 80% Sat GOOD 0 -17% PSU 95%-ile > 70% Sat		HIGH 0 - 17 % PSU 95%-ile < 120% Sat. GOOD 0 - 17% PSU 95%-ile < 130% Sat.		HIGH 0% - 17% PSU < 0.030 mg/l P (median) GOOD 0 -17% PSU < 0.060 mg/l P (median)		HIGH >17 - 35% PSU < 0.030 -0.025 mg/l P (median) GOOD > 17 - 35% PSU < 0.060 - 0.040 mg/l P (median)				< 1.5 degrees above ambient outside the mixing zone	
DCC	ASW 25	123_ESTUAR	130842	(130842) Liffey Estuary Lower, 25m North of Poolbeg Wall - Surface Sample	28/04/2022 11:00	1958109	5345	0	8.5	6652	99		1.5	412		33.88	1680	15.1	1307		
					26/05/2022 09:31	1967641	730	1	1.2	910	98		0.3	71		33.19	350	14	180		
					23/06/2022 09:34	1977335	2377	4	1.6	3432	101		1.3	360		34.38	1721	19.5	1055		
					13/07/2022 11:08	1984781	317	1	2.8	575	100		1.8	165		34.02	593	18.7	258		
					25/08/2022 08:40	1999459	<10	2	4	< 50	100		1.6	139		33.29	1507	18.2	<40		
					21/09/2022 10:16	2008860	1520	2	2.3	2055	99		0.9	377		33.27	1160	15.3	535		
									2.6						262.5	33.59					
DCC	ASW 20	123_ESTUAR	130843	(130843) Liffey Estuary Lower, 25m North of Poolbeg Wall - Depth Sample	28/04/2022 11:00	1958110	191	3	4.7	191	95		1.6	42		34.79	<50	12.6	<40		
					26/05/2022 09:29	1967642	177	<1	1.2	177	94		0.4	43		34.68	129	12.9	<40		
					23/06/2022 09:36	1977336	153	<1	3.7	153	98		1.2	63		34.77	153	15.1	<40		
					13/07/2022 11:10	1984782	86	1	3.3	158	96		1.7	48		34.81	313	16.7	72		
					25/08/2022 08:41	1999460	<10	2	5.3	< 50	96		4.1	37		33.61	255	17.3	<40		
					21/09/2022 10:20	2008861	343	2	1.9	496	96		0.8	90		33.56	358	14.8	153		
									3.5						45.5	34.71					
DCC	ASW 35	123_ESTUAR	130844	(130844) Liffey Estuary Lower, 50m North of Poolbeg Wall - Surface Sample	28/04/2022 11:00	1958111	5157	6	10.7	5771	99		2.4	357		34.1	1165	14.2	614		
					26/05/2022 09:20	1967643	1276	1	0.9	1629	98		0.6	98		33.62	546	14.1	353		
					23/06/2022 09:22	1977337	2161	3	2.5	3106	101		1.6	320		34.45	1377	17.1	945		
					13/07/2022 10:55	1984783	176	1	3.9	374	99		1.5	121		33.72	443	17.8	198		
					25/08/2022 08:48	1999461	<10	1	2.8	112	99		0.7	10		33.36	1737	18.2	112		
					21/09/2022 10:27	2008862	856	2	2.3	1318	99		0.9	220		33.41	885	15.5	462		
									2.7						170.5	33.67					
DCC	ASW 30	123_ESTUAR	130845	(130845) Liffey Estuary Lower, 50m North of Poolbeg Wall - Depth Sample	28/04/2022 11:00	1958112	134	2	8.1	134	94		1.3	38		34.95	<50	11.9	<40		
					26/05/2022 09:18	1967644	211	<1	1.2	261	92		<0.1	46		34.57	162	13.1	50		
					23/06/2022 09:23	1977338	111	1	3.7	111	93		1.1	52		34.82	147	15.4	<40		
					13/07/2022 10:57	1984784	162	2	2.5	162	92		0.9	58		34.71	156	16.4	<40		
					25/08/2022 08:49	1999462	<10	1	3.6	44	92		1.1	<10		34.26	980	16.9	44		
					21/09/2022 10:33	2008863	181	<1	2.7	257	95		0.9	58		34.07	240	14.7	76		
									3.2						49	34.64					
DCC	ASW 45	123_ESTUAR	130846	(130846) Liffey Estuary Lower, 75m North of Poolbeg Wall - Surface Sample	28/04/2022 11:00	1958113	631	3	9.2	835	99		1.2	106		34.11	147	12.9	205		
					26/05/2022 09:14	1967645	126	<1	0.9	126	99		0.4	41		34.22	154	12.9	<40		
					23/06/2022 09:10	1977339	75	<1	3.3	201	100		1	41		34.37	395	15.6	126		
					13/07/2022 10:22	1984785	60	<1	3.2	60	99		1.1	42		33.65	142	17.3	<40		
					25/08/2022 09:11	1999463	431	1	4	594	98		1.2	103		33.41	477	18.5	163		
					21/09/2022 10:42	2008864	1953	1	1.6	2545	99		0.7	257		33.56	2041	15.5	592		
									3.3						72.5	33.88					

				21/09/2022 10:55	2008867	154	<1	2.9	238	96		0.7	53	33.87	246	15.5	84
								3					39	34.73			
DCC	ASW 65	123_ESTUAR	40063 (40063) Liffey City D/S Islandbdg Weir	28/04/2022 08:45	1957890	27	<1	4.4	3081	90		3	<10	0.3	264	11.5	3054
				26/05/2022 09:10	1967557	96	<1	1.6	1651	90		1.3	16	0.3	1559	15.6	1555
				23/06/2022 08:50	1977249	52	<1	2.8	960	91		2.2	22	0.3	1963	17.6	908
				13/07/2022 09:45	1984722	18	1	7.1	1581	108		2.9	13	0.37	1992	19.6	1563
				25/08/2022 09:40	1999309	<10	2	4.8	1721	90		2.6	23	0.3	3700	17.2	1721
				21/09/2022 08:50	2008771	44	1	1.9	2761	90		2.7	46	0.3	4878	15.2	2717
								3.1				19	0.3				
DCC	ASW 75	123_ESTUAR	40067 (40067) Liffey City Heuston Stn u/s Camac	28/04/2022 09:10	1957891	19	<1	3.3	2700	81		3.4	<10	1	400	11.2	2681
				26/05/2022 09:25	1967558	55	<1	0.9	1442	82		1.5	24	2.4	1782	15.2	1387
				23/06/2022 09:10	1977250	66	1	1.5	1426	78		16.6	33	1.9	2144	17.1	1360
				13/07/2022 10:00	1984723	13	1	3.6	689	94		2.1	14	7.36	1537	18.3	676
				25/08/2022 09:50	1999310	<10	<1	13.9	1064	88		2.9	<10	3.3	3780	17.1	1064
				21/09/2022 09:10	2008772	59	<1	4	1879	84		4.4	53	2.9	5017	14.6	1820
								3.5				19	2.65				
DCC	ASW 85	123_ESTUAR	40072 (40072) Liffey City Winetav St Bridge	28/04/2022 11:00	1957892	15	4	31.8	1893	99		13.1	<10	3	287	11.7	1878
				26/05/2022 11:05	1967559	72	<1	1.5	1136	78		1.5	33	9	1421	15.7	1064
				23/06/2022 11:15	1977251	80	2	8.8	1417	86		4.1	42	9.3	1639	18.3	1337
				13/07/2022 10:30	1984724	58	<1	2.1	166	90		2.1	26	27.4	318	17.6	108
				25/08/2022 10:00	1999311	<10	2	3.1	42	83		2.6	<10	17	978	17.2	42
				21/09/2022 11:00	2008773	76	<1	2.3	1953	84		1.9	56	5.2	4565	15.2	1877
								2.7				29.5	9.2				
DCC	ASW 95	123_ESTUAR	40457 (40457) Liffey (S) D/S Toll Bridge	28/04/2022 09:40	1957893	40	2	21	951	99		5.1	18	15.6	262	10.9	911
				26/05/2022 09:50	1967560	87	<1	1.3	998	84		1.4	35	18.8	2080	14.5	911
				23/06/2022 09:35	1977252	72	1	5.9	593	82		3.6	42	12.1	3451	16.2	521
				13/07/2022 10:40	1984725	64	<1	2.7	211	94		1.9	29	28.7	334	18.8	147
				25/08/2022 10:20	1999312	<10	1	2.3	88	88		1.5	<10	23.7	537	17.1	88
				21/09/2022 09:40	2008774	100	<1	0.9	1226	86		1.3	54	13.5	4197	14.7	1126
								2.5				32	17.2				
DCC	ASW 105	123_ESTUAR	45082 (45082) Tolka River D/S Annesley Bridge	28/04/2022 10:00	1957894	391	2	18.7	1306	76		7	99	14.8	739	10.8	915
				26/05/2022 10:10	1967561	116	<1	2.7	1667	82		2.5	83	4.5	5620	14.5	1551
				23/06/2022 09:45	1977253	177	1	3.5	1315	68		2.3	151	6.8	5223	16.6	1138
				13/07/2022 11:30	1984726	82	1	3	565	97		3	62	10.35	1796	18.8	483
				25/08/2022 10:35	1999313	<10		12.1	< 50	81		4.2	30	20.4	1810	16.7	<40
				21/09/2022 09:55	2008775	232	2	12.7	867	73		5.4	134	20.2	1541	15.7	635
								7.8				91	12.58				

Appendix 7.1.3 Transitional Water Body Monitoring 2022 - EPA DB-020 to DB-420

Report for Samples Taken During the Period: 01/01/2022 - 31/12/2022

at 09/01/2023

Custom 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 Temp °C	Chlorophyll a mg/m3	DIN ug/l N	Dissolved Oxygen % Sat.	Dissolved Oxygen % Sat.	Oxygen at 0 m depth % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Phosphorus (React) µg/l SRP as P	Salinity PSU	Salinity (mean) PSU	Silica µg/l as SiO2	Surface Temp °C	Temp °C	TON µg/l as N																								
Surface Water Objectives for Transitional Water Bodies SI 272 of 2009 as amended by SI 77 of 2019						Compliant						HIGH <3.0 mg/l (95%-ile) GOOD < 4 mg/l (95%-ile)						HIGH-GOOD 2.5 median GOOD-MODERATE 5.0 median						HIGH 0 - 17 % PSU 95%-ile > 80% Sat GOOD 0 - 17% PSU 95%-ile > 70% Sat.						HIGH 0 - 17 % PSU 95%-ile < 120% Sat. GOOD 0 - 17% PSU 95%-ile < 130% Sat.						HIGH 0% - 17% PSU < 0.030 mg/l P (median) GOOD 0 - 17% PSU < 0.060 mg/l P (median)						HIGH >17 - 35% PSU < 0.030 - 0.025 mg/l P (median) GOOD > 17 - 35% PSU < 0.060 - 0.040 mg/l P (median)					
DCC	DB 020	123_ESTUAR	130870 (130870) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Surface Sample	28/04/2022 11:00	1958117	41	2			0.9	2359	98			1.3	14		14.62		299		12.5	2318																								
				26/05/2022 07:30	1967649	164	1			4.4	494	98			1.3	62		21.47		570		13.2	330																								
				23/06/2022 07:31	1977343	193	1			7.5	1159	101			3	68		20.61		2301		15.8	966																								
				13/07/2022 08:21	1984789	98	1			4.4	411	97			2.4	43		20.61		623		17.3	313																								
				25/08/2022 08:05	1999467	38	2			4.9	373	100			2.2	14		29.02		840		17.7	335																								
				21/09/2022 08:02	2008868	97	1			0.4	1602	93			0.6	59		31.62		2998		15.3	1505																								
						4.4						51						21.04																													
DCC	DB 020	123_ESTUAR	130871 (130871) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Depth Sample	28/04/2022 11:00	1958118	346	2			12.3	551	93			4.7	127		33.71		314		12.1	205																								
				26/05/2022 07:28	1967650	236	<1			3.6	283	94			1.2	80		34.05		370		13.1	47																								
				23/06/2022 07:32	1977344	162	2			7.2	205	95			8.1	57		33.27		555		15.5	43																								
				13/07/2022 08:22	1984790	155	1			3.7	234	92			3.6	54		33.07		512		15.9	79																								
				25/08/2022 08:06	1999468	72	1			7.3	122	97			3.9	27		33.52		217		17.2	50																								
				21/09/2022 08:06	2008869	127	1			3.1	281	92			2.5	55		32.24		343		15	154																								
						5.5						56						33.4																													
DCC	DB120	123_ESTUAR	130800 (130800) Liffey Estuary Lower, Dodder Grand Canal Basin- Surface Sample	28/04/2022 11:00	1958100	67	2			3.2	1053	100			3.1	19		15.61		632		12.9	986																								
				26/05/2022 07:45	1967632	123	<1			2.7	303	100			0.7	512		21.47		418		13.1	180																								
				23/06/2022 07:41	1977326	71	1			5.7	338	100			3.3	34		22.21		1137		15.8	267																								
				13/07/2022 08:29	1984772	45	2			3.2	191	99			3	23		23.67		784		17.2	146																								
				25/08/2022 08:12	1999450	<10	1			11.2	109	95			3.3	10		21.38		1421		17.2	109																								
				21/09/2022 08:30	2008851	106	1			3.7	1149	98			2.1	56		21.41		4160		15.2	1043																								
						3.45						28.5						21.44																													
DCC	DB 120	123_ESTUAR	130801 (130801) Liffey Estuary Lower, Dodder Grand Canal Basin- Depth Sample	28/04/2022 11:00	1958101	282	3			28.8	546	97			11.2	64		33.42		162		12.5	264																								
				26/05/2022 07:43	1967633	142	1			4.5	201	97			0.8	430		34.05		261		13.2	59																								
				23/06/2022 07:42	1977327	163	1			0.3	210	94			9.5	54		33.54		354		15.2	47																								
				13/07/2022 08:31	1984773	58	<1			2.9	188	96			1.3	30		33.36		636		16.8	130																								
				25/08/2022 08:13	1999451	<10	2			< 50	94				<10			32.97		806		16.5	<40																								
				21/09/2022 08:35	2008852	136	<1			0.9	384	95			1.2	51		33.01		662		14.6	248																								
						2.9						53						33.39																													
DCC	DB 210	123_ESTUAR	130810 (130810) Liffey Estuary Lower, East Link Toll Bridge - Surface Sample	28/04/2022 11:00	1958102	63	2			3.1	1629	100			1.4	18		21.6		332		12.8	1566																								
				26/05/2022 07:58	1967634	139	<1			2.7	300	100			0.8	301		28.48		385		13.3	161																								
				23/06/2022 07:50	1977328	78	1			3.9	403	101			2.2	28		29.36		758		15.9	325																								
				13/07/2022 08:42	1984774	81	<1			2.9	321	100			1.6	27		28.15		559		17.1	240																								
				25/08/2022 08:20	1999452	<10	<1			3.1	290	99			1.6	<10		28.71		1365		17.4	290																								
				21/09/2022 08:42	2008853	99	<1			0.9	1468	93			0.5	58		29.62		4506		15.3	1369																								
						3						28						28.6																													
DCC	DB 210	123_ESTUAR	130811 (130811) Liffey Estuary Lower, East Link Toll Bridge - Depth Sample	28/04/2022 11:00	1958103	251	2			14.2	358	97			4.4	73		34.51		86		12.4	107																								
				26/05/2022 07:56	1967635	142	<1			3.1	192	97			1.7	195		33.84		209		13.2	50																								
				23/06/2022 07:51	1977329	127	1			4.7	180	93			1.4	52		33.77		281		15.4	53																								
				13/07/2022 08:44	1984775	48	<1			3.3	169	94			2.2	39		33.88		573		16.6	121																								
				25/08/2022 08:21	1999453	<10	1			4.3	139	95			2.3	<10		33.82		1275		16.7	139																								
				21/09/2022 08:48	2008854	138	1			3.3	328	92			1.5	51		34.12		481		14.7	190																								
						3.8						52						33.86																													
DCC	DB 220	123_ESTUAR	130820 (130820) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - Surface Sample	28/04/2022 11:00	1958104	207	2			12.8	583	100			1.1	52		29.96		103		12.8	376																								
				26/05/2022 08:21	1967636	115	<1			1.1	214	100			0.4	121		32.37		281		13.1	99																								
				23/06/2022 08:10	1977330	77	1			3.2	77	101			1	42		33.61		178		15.4	<40																								

				13/07/2022 09:05	1984776	35	<1			2.8	118	100			2.3	28			33.36		372		17	83
				25/08/2022 08:31	1999454	<10	<1			3.2	241	99			1.4	<10			33.66		1268		17.7	241
				21/09/2022 09:01	2008855	109	<1			2.8	467	101			0.7	50			34.11		790		15.9	358
										3									46		33.49			
DCC	DB 220	123_ESTUAR	130821 (130821) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - Depth Sample	28/04/2022 11:00	1958105	112	2			12.4	180	99			1.8	37			34.62		<50		12.6	68
				26/05/2022 08:19	1967637	112	<1			1.3	156	97			0.3	32			34.18		168		13.1	44
				23/06/2022 08:11	1977331	65	<1			3.5	65	97			1.1	36			34.59		107		15.2	<40
				13/07/2022 09:07	1984777	17	<1			2.5	17	96			1.1	26			34.19		311		15.8	<40
				25/08/2022 08:32	1999455	<10	<1			2.9	64	93			2	10			34.29		1118		17.1	64
				21/09/2022 09:05	2008856	121	<1			3.2	262	99			0.9	44			34.68		382		15.4	141
										3.1									34		34.44			
DCC	DB 410	123_ESTUAR	130830 (130830) Liffey Estuary Lower, Ringsend Cascade - Surface Sample	28/04/2022 11:00	1958106	1141	4			7.9	1302	100			1	121			33.58		218		12.9	161
				26/05/2022 09:41	1967638	170	<1			0.8	170	99			0.3	31			33.45		142		12.9	<40
				23/06/2022 09:06	1977332	95	1			3.5	230	102			1.2	40			34.27		437		15.6	135
				13/07/2022 10:30	1984778	47	<1			2.4	124	101			1	35			33.92		288		17.5	77
				25/08/2022 09:18	1999456	<10	1			2.7	76	98			1.1	10			33.49		1104		18.7	76
				21/09/2022 10:00	2008857	1194	2			1.6	2055	99			1.8	527			33.17		1387		15.6	861
										2.6									38		33.47			
DCC	DB 410	123_ESTUAR	130831 (130831) Liffey Estuary Lower, Ringsend Cascade - Depth Sample	28/04/2022 11:00	1958107	177	2			5.9	220	97			1.9	35			34.81		<50		11.6	43
				26/05/2022 09:39	1967639	132	<1			1.1	132	95			0.3	34			34.71		131		12.8	<40
				23/06/2022 09:08	1977333	46	<1			2.9	46	93			0.8	31			34.71		87		14.9	<40
				13/07/2022 10:32	1984779	18	<1			1.6	18	93			0.5	44			34.79		115		15.1	<40
				25/08/2022 09:19	1999457	<10	1			3.7	<50	93			1.4	<10			34.16		882		17.2	<40
				21/09/2022 10:05	2008858	183	<1			3.5	279	98			0.6	61			34.26		268		15	96
										3.2									35		34.71			
DCC	DB 420	123A_ESTUA	130839 (130839) Liffey Estuary Lower, Poolbeg Lighthouse - Composite Sample	28/04/2022 11:00	1958108	91	2	100.4	12.6	5.2	91				100.9	0.6	29			35.3	<50	12.8		<40
				26/05/2022 10:02	1967640	32	<1	100.6	12.9	0.9	32				101	0.4	18			35.02	75	13.1		<40
				23/06/2022 09:55	1977334	214	1	101.3	15.5	2.7	264				101.7	1.2	78			35.16	232	15.9		50
				13/07/2022 11:31	1984780	87	<1	101.3	16.7	2	138				101.6	0.6	51			35.29	152	17		51
				25/08/2022 10:11	1999458	<10	<1	101.2	16.7	2.8	50				101.6	0.7	<10			35.08	1196	17		50
				21/09/2022 11:15	2008859	161	<1	101.7	15.6	2.7	238				102	0.9	52			34.95	252	15.8		77
										2.7									40		35.12			
DCC	DB 300	123_ESTUAR	45076 (45076) Tolka River U/S Drumcondra Bridge	28/04/2022 10:35	1957895	33	<1			8.3	1348	101			4.5	29			0.4		1371		10.4	1315
				26/05/2022 10:40	1967562	79	1			4.3	1596	95			2.3	75			0.4		6982		16.1	1517
				23/06/2022 10:30	1977254	75	1			3.7	1673	100			3.1	140			0.4		6249		17.1	1598
				13/07/2022 11:20	1984727	55	1			17.8	1047	98			8.9	48			0.35				19.2	992
				25/08/2022 11:15	1999314	<10	<1			25.9	600	96			7.8	11			0.4		6173		16.8	600
				21/09/2022 10:35	2008776	26	1			3.2	1787	107			2.1	88			0.4		5034		14.8	1761
										6.3					61.2				0.4					
DCC	DB 320	123_ESTUAR	130900 (130900) Tolka Estuary at East Point Business Park Bridge - Surface Sample	28/04/2022 10:20	1957896	378	1			7.7	1536	80			<0.1	87			9.5		982		10.9	1158
				26/05/2022 10:30	1967563	111	<1			1.5	1079	83			2.1	73			10.1		4338		15.2	968
				23/06/2022 10:05	1977255	203	<1			<0.1	1162	73			5.9	150			8.9		4869		17.2	959
				13/07/2022 12:20	1984728	65	<1			2.7	556	98			2.9	51			13.34		1992		18.4	491
				25/08/2022 10:55	1999315	<10	2			9.6	<50	92			3	21			24.5		2654		17	<40
				21/09/2022 10:25	2008777	211	1			13.1	646	84			3.9	131			22.4		933		16	435
										5.2					80				11.72					
DCC	DB 320	123_ESTUAR	130901 (130901) Tolka Estuary at East Point Business Park Bridge - Depth Sample	28/04/2022 10:10	1957897	311	4				1169	85				87			14.7		873		11.1	858
				26/05/2022 10:20	1967564	123	<1			1.5	769	80			1.5	59			20.2		2494		14.6	646
				23/06/2022 09:55	1977256	509	1			2.9	1165	88			2.6	325			15.4		3517		17	656
				13/07/2022 12:30	1984729	86	2			3.7	358	100			2.7	51			21.08		1346		19.2	272
				25/08/2022 10:45	1999316	<10	5			2.9	<50	104			2.2	<10			30.3		631		17.2	<40
				21/09/2022 10:10	2008778	337	2			15.5	592	76			4.5	164			27.7		561		16.1	255
										3.7									73		20.64			

DCC	DB 330	123_ESTUAR	130910 (130910) Tolka Estuary, Castle Ave. - Surface Sample	26/05/2022 08:45	1967651	172	<1			1.1	330	100			1.1	75		33.61	657	13.4	158																																																																																							
DCC	DB330	123_ESTUAR	130911 (130911) Tolka Estuary, Castle Ave. - Depth Sample	26/05/2022 08:43	1967652	176	<1			1.2	279	99			0.9	63		34.51	373	13.1	103																																																																																							
DCC	DB 330	123A_ESTUA	130912 (130912) Tolka Estuary, Castle Ave. - Composite Sample	28/04/2022 11:00	1958119	381	2	99.6	12.6	14.4	578			99.9	3.5	106		35.02	87	12.7	197																																																																																							
						<table border="1"> <tr> <td>23/06/2022 08:31</td> <td>1977345</td> <td>357</td> <td>1</td> <td>99.8</td> <td>16.3</td> <td>4</td> <td>472</td> <td></td> <td></td> <td>99.9</td> <td>1.8</td> <td>136</td> <td></td> <td></td> <td></td> <td></td> <td>34.87</td> <td>583</td> <td>16.4</td> <td>115</td> </tr> <tr> <td>13/07/2022 09:49</td> <td>1984791</td> <td>65</td> <td>1</td> <td>99</td> <td>16.7</td> <td>4.5</td> <td>121</td> <td></td> <td></td> <td>99.1</td> <td>1.9</td> <td>50</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.92</td> <td>194</td> <td>16.8</td> <td>56</td> </tr> <tr> <td>25/08/2022 09:45</td> <td>1999469</td> <td>61</td> <td>2</td> <td>100.7</td> <td>17.4</td> <td>10.9</td> <td>131</td> <td></td> <td></td> <td>100.6</td> <td>3.1</td> <td>31</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>33.89</td> <td>401</td> <td>17.4</td> <td>70</td> </tr> <tr> <td>21/09/2022 09:41</td> <td>2008870</td> <td>348</td> <td><1</td> <td>97.2</td> <td>15.7</td> <td>4.7</td> <td>551</td> <td></td> <td></td> <td>97.3</td> <td>0.7</td> <td>123</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.25</td> <td>414</td> <td>15.8</td> <td>203</td> </tr> </table>																23/06/2022 08:31	1977345	357	1	99.8	16.3	4	472			99.9	1.8	136					34.87	583	16.4	115	13/07/2022 09:49	1984791	65	1	99	16.7	4.5	121			99.1	1.9	50						34.92	194	16.8	56	25/08/2022 09:45	1999469	61	2	100.7	17.4	10.9	131			100.6	3.1	31						33.89	401	17.4	70	21/09/2022 09:41	2008870	348	<1	97.2	15.7	4.7	551			97.3	0.7	123						34.25	414	15.8	203
23/06/2022 08:31	1977345	357	1	99.8	16.3	4	472			99.9	1.8	136					34.87	583	16.4	115																																																																																								
13/07/2022 09:49	1984791	65	1	99	16.7	4.5	121			99.1	1.9	50						34.92	194	16.8	56																																																																																							
25/08/2022 09:45	1999469	61	2	100.7	17.4	10.9	131			100.6	3.1	31						33.89	401	17.4	70																																																																																							
21/09/2022 09:41	2008870	348	<1	97.2	15.7	4.7	551			97.3	0.7	123						34.25	414	15.8	203																																																																																							

DCC	DB 340	123A_ESTUA	130922 (130922) Tolka Estuary, Clontarf Boat Club - Composite Sample	28/04/2022 11:00	1958120	169	2	99.8	12.6	15.6	249			99.9	2.7	58		35.06	<50	12.6	80																																																																																																														
						<table border="1"> <tr> <td>26/05/2022 08:38</td> <td>1967653</td> <td>124</td> <td><1</td> <td>100</td> <td>13.1</td> <td>0.8</td> <td>124</td> <td></td> <td></td> <td>100.1</td> <td>0.5</td> <td>40</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.87</td> <td>150</td> <td>13.2</td> <td><40</td> </tr> <tr> <td>23/06/2022 08:22</td> <td>1977346</td> <td>338</td> <td><1</td> <td>99.2</td> <td>16.3</td> <td>3.6</td> <td>419</td> <td></td> <td></td> <td>99.2</td> <td>1.4</td> <td>121</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.92</td> <td>328</td> <td>16.3</td> <td>81</td> </tr> <tr> <td>13/07/2022 09:33</td> <td>1984792</td> <td>43</td> <td>1</td> <td>99.5</td> <td>16.6</td> <td>2.9</td> <td>43</td> <td></td> <td></td> <td>99.6</td> <td>1.2</td> <td>36</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.86</td> <td>156</td> <td>16.7</td> <td><40</td> </tr> <tr> <td>25/08/2022 09:35</td> <td>1999470</td> <td>49</td> <td><1</td> <td>99.8</td> <td>17.4</td> <td>4.5</td> <td>112</td> <td></td> <td></td> <td>99.9</td> <td>1.6</td> <td>38</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.42</td> <td>377</td> <td>17.5</td> <td>63</td> </tr> <tr> <td>21/09/2022 09:33</td> <td>2008871</td> <td>392</td> <td>1</td> <td>97.4</td> <td>15.6</td> <td>3.6</td> <td>620</td> <td></td> <td></td> <td>97.5</td> <td>1</td> <td>147</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.39</td> <td>442</td> <td>15.6</td> <td>228</td> </tr> </table>																26/05/2022 08:38	1967653	124	<1	100	13.1	0.8	124			100.1	0.5	40						34.87	150	13.2	<40	23/06/2022 08:22	1977346	338	<1	99.2	16.3	3.6	419			99.2	1.4	121						34.92	328	16.3	81	13/07/2022 09:33	1984792	43	1	99.5	16.6	2.9	43			99.6	1.2	36						34.86	156	16.7	<40	25/08/2022 09:35	1999470	49	<1	99.8	17.4	4.5	112			99.9	1.6	38						34.42	377	17.5	63	21/09/2022 09:33	2008871	392	1	97.4	15.6	3.6	620			97.5	1	147						34.39	442	15.6	228
26/05/2022 08:38	1967653	124	<1	100	13.1	0.8	124			100.1	0.5	40						34.87	150	13.2	<40																																																																																																														
23/06/2022 08:22	1977346	338	<1	99.2	16.3	3.6	419			99.2	1.4	121						34.92	328	16.3	81																																																																																																														
13/07/2022 09:33	1984792	43	1	99.5	16.6	2.9	43			99.6	1.2	36						34.86	156	16.7	<40																																																																																																														
25/08/2022 09:35	1999470	49	<1	99.8	17.4	4.5	112			99.9	1.6	38						34.42	377	17.5	63																																																																																																														
21/09/2022 09:33	2008871	392	1	97.4	15.6	3.6	620			97.5	1	147						34.39	442	15.6	228																																																																																																														

DCC	DB 350	123A_ESTUA	130932 (130932) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Composite Sample	28/04/2022 11:00	1958121	247	2	99.4	12.6	16.7	363			99.7	2.8	67		34.89	<50	12.7	116																																																																																																														
						<table border="1"> <tr> <td>26/05/2022 08:53</td> <td>1967654</td> <td>204</td> <td><1</td> <td>99.8</td> <td>13.4</td> <td>1.3</td> <td>248</td> <td></td> <td></td> <td>99.9</td> <td>1.1</td> <td>47</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.95</td> <td>173</td> <td>13.4</td> <td>44</td> </tr> <tr> <td>23/06/2022 08:42</td> <td>1977347</td> <td>194</td> <td>1</td> <td>98.6</td> <td>16.5</td> <td>4.9</td> <td>236</td> <td></td> <td></td> <td>98.7</td> <td>1.6</td> <td>85</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>35.02</td> <td>215</td> <td>16.7</td> <td>42</td> </tr> <tr> <td>13/07/2022 09:59</td> <td>1984793</td> <td>57</td> <td><1</td> <td>99.5</td> <td>16.6</td> <td>3.3</td> <td>101</td> <td></td> <td></td> <td>99.6</td> <td>1.9</td> <td>56</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>35.07</td> <td>161</td> <td>16.6</td> <td>44</td> </tr> <tr> <td>25/08/2022 09:56</td> <td>1999471</td> <td>67</td> <td>1</td> <td>100.2</td> <td>17.5</td> <td>7.6</td> <td>127</td> <td></td> <td></td> <td>100.3</td> <td>1.9</td> <td>21</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.1</td> <td>421</td> <td>17.6</td> <td>60</td> </tr> <tr> <td>21/09/2022 09:22</td> <td>2008872</td> <td>489</td> <td>1</td> <td>98.1</td> <td>15.6</td> <td>5.7</td> <td>776</td> <td></td> <td></td> <td>98.2</td> <td>2.8</td> <td>172</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>34.28</td> <td>595</td> <td>15.7</td> <td>287</td> </tr> </table>																26/05/2022 08:53	1967654	204	<1	99.8	13.4	1.3	248			99.9	1.1	47						34.95	173	13.4	44	23/06/2022 08:42	1977347	194	1	98.6	16.5	4.9	236			98.7	1.6	85						35.02	215	16.7	42	13/07/2022 09:59	1984793	57	<1	99.5	16.6	3.3	101			99.6	1.9	56						35.07	161	16.6	44	25/08/2022 09:56	1999471	67	1	100.2	17.5	7.6	127			100.3	1.9	21						34.1	421	17.6	60	21/09/2022 09:22	2008872	489	1	98.1	15.6	5.7	776			98.2	2.8	172						34.28	595	15.7	287
26/05/2022 08:53	1967654	204	<1	99.8	13.4	1.3	248			99.9	1.1	47						34.95	173	13.4	44																																																																																																														
23/06/2022 08:42	1977347	194	1	98.6	16.5	4.9	236			98.7	1.6	85						35.02	215	16.7	42																																																																																																														
13/07/2022 09:59	1984793	57	<1	99.5	16.6	3.3	101			99.6	1.9	56						35.07	161	16.6	44																																																																																																														
25/08/2022 09:56	1999471	67	1	100.2	17.5	7.6	127			100.3	1.9	21						34.1	421	17.6	60																																																																																																														
21/09/2022 09:22	2008872	489	1	98.1	15.6	5.7	776			98.2	2.8	172						34.28	595	15.7	287																																																																																																														

Appendix 7.1(4) Dublin Bay Water Quality Monitoring Points Agreed by EPA

Report for Samples Taken During the Period: 01/01/2022 - 31/12/2022
 Customer EPA Code Test List Sampling Point Sampling Point Description

at 09/01/2023
 Sampled Date

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 Temp °C	Chlorophyll a mg/m3	DIN ug/l N (Winter and Summer)	DIN ug/l N (Winter and Summer)	Dissolved Oxygen % Sat. Lower Limit	Dissolved Oxygen % Sat. Upper Limit	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 Temp °C	Temp °C	TON µg/l as N	
<p>Surface Water Objectives for Transitional Water Bodies SI 272 of 2009 as amended by SI 77 of 2019</p> <p>Compliant</p> <p>Non-Compliant</p>																								
						HIGH				HIGH-GOOD	HIGH STATUS	HIGH STATUS	HIGH	HIGH								< 1.5 degrees	< 1.5 degrees	
						<3.0 mg/l				2.5 median	0% PSU	34.5% PSU	>17% to 35% PSU	>17% to 35% PSU								above ambient	above ambient	
						(95%-ile)					<1000 ug/l N	170 ug/l	95%-ile > 80-85%	95%-ile < 115 -120% Sat.								outside the	outside the	
						GOOD				GOOD-MODERATE	GOOD STATUS	GOOD STATUS	GOOD	GOOD								mixing zone	mixing zone	
						< 4 mg/l				5.0 median	0% PSU	34.5% PSU	>17% to 35% PSU	>17% to 35% PSU										
						(95%-ile)					2,600 ug/l N	250 ug/l	95%-ile > 70-80 %	95%-ile <120 - 130% Sat										
DCC	DB 610	123A_ESTUA	130602 [130602] Irish Sea Dublin, Bailey - Composite Sample	25/05/2022 09:55 22/06/2022 09:37 20/07/2022 08:38 24/08/2022 08:28	1967194 1976896 1987198 1998825	49 57 13 <10	1 <1 1 1	101.3 97.4 101.2 102.1	12 13.4 14.4 17	2.4 3.1 2.5 4.5	49 57 13 <50				101.9 98.3 101.8 102.4	0.5 1 0.5 0.9	30 34 13 11		35.66 35.48 35.48 35.61	73 96 14.8 325	12.4 13.8 14.8 17.3			<40 <40 <40 <40
						2.8												35.55						
DCC	DB 430	123_ESTUAR	130700 [130700] Dublin Bay, 1km NE Poolbeg Lighthouse - Surface Sample	25/05/2022 09:08	1967185	86	<1			1.3	86		101			0.3	30	35.21		80			12.2	<40
DCC	DB 430	123_ESTUAR	130701 [130701] Dublin Bay, 1km NE Poolbeg Lighthouse - Depth Sample	25/05/2022 09:10	1967186	40	<1			2.5	40		100			<0.1	28	35.5		82			12	<40
DCC	DB 430	123A_ESTUA	130702 [130702] Dublin Bay, 1km NE Poolbeg Lighthouse - Composite Sample	22/06/2022 09:05 20/07/2022 09:09 24/08/2022 09:02	1976888 1987190 1998817	56 60 <10	<1 1 <1	102.2 102.2 101.1	14.4 15 16.7	3.9 2.4 3.3	56 60 219				102 102.8 101.4	0.8 1.2 0.9	28 33 <10		35.32 35.43 35.26	85 93 1740	14.5 15.3 16.9			<40 <40 219
						3.3												35.32						
DCC	DB 450	123A_ESTUA	130712 [130712] Dublin Bay, South Buil Bouy, 1km SE Poolbeg Lighthouse - Composite Sample	25/05/2022 08:47 22/06/2022 08:55 20/07/2022 09:15 24/08/2022 09:20	1967187 1976889 1987191 1998818	82 204 34 <10	<1 <1 <1 <1	100.6 100.2 101.2 101	11.9 14.2 14.8 16.3	1.1 2.5 2.1 2.9	82 248 34 <50				101.1 100.6 101.6 101.5	0.5 1.1 0.9 0.5	36 77 28 <10		35.4 35.38 35.36 35.32	88 174 87 343	12.3 14.6 15.1 16.8			<40 44 <40 <40
						2.3												35.37						
DCC	DB 510*	123A_ESTUA	130722 [130722] Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Composite Sample	25/05/2022 09:22 22/06/2022 08:55 20/07/2022 08:58 24/08/2022 08:51	1967189 1976891 1987193 1998820	65 49 13 <10	1 <1 <1 <1	100.6 102.6 103.6 101.3	12.1 14.2 14.7 16.7	1.1 3.2 2.5 2.5	65 49 13 <50				101 103.4 104.1 101.7	0.4 0.6 0.5 1.2	28 36 17 12		35.5 35.4 35.44 35.48	88 92 <50 359	12.4 14.5 15.1 17			<40 <40 <40 <40
						2.5												35.46						
DCC	DB 540*	123A_ESTUA	130732 [130732] Dublin Bay, 2.5km SSE Poolbeg Lighthouse - Composite Sample	25/05/2022 08:34 22/06/2022 09:22 20/07/2022 09:28 24/08/2022 09:28	1967190 1976892 1987194 1998821	47 39 26 <10	<1 <1 <1 <1	100.8 99.7 101.2 100.8	12.1 13.8 14.6 16.3	1.3 3.5 2.3 2.9	47 39 26 <50				101.2 100.6 101.7 101.4	0.4 0.9 0.8 0.8	32 34 21 11		35.52 35.41 35.39 35.49	95 107 59 335	12.4 14.4 15 16.8			<40 <40 <40 <40
						2.6												35.45						
DCC	DB 550	123A_ESTUA	130742 [130742] Dublin Bay, No. 4 Bouy, 2.5km E of 5 Poolbeg Lighthouse - Composite Sample	25/05/2022 08:22 22/06/2022 09:51 20/07/2022 09:48 24/08/2022 09:58	1967188 1976890 1987192 1998819	37 28 12 <10	<1 <1 <1 <1	100.3 98.3 100.3 101.1	12.1 14.5 14.7 16	0.8 3.5 1.3 1.9	37 28 12 <50				100.7 98.9 100.9 101.7	0.2 0.6 0.5 0.6	30 31 23 17		35.47 35.39 35.35 35.42	93 94 55 372	12.4 14.7 15 16.6			<40 <40 <40 <40
						1.6												35.41						
DCC	DB 560	123A_ESTUA	130752 [130752] Dublin Bay, Drumleck Point, 5km ENE Poolbeg Lighthouse - Composite Sample	25/05/2022 09:41 22/06/2022 08:46 20/07/2022 08:47 24/08/2022 08:40	1967192 1976894 1987196 1998823	63 43 20 <10	1 <1 1 1	101.3 98.4 101.2 101.1	12.2 13.3 14.6 17.2	1.5 3.2 2.4 4.1	63 43 20 <50				101.6 98.9 101.6 101.6	0.6 0.9 0.6 1.1	31 34 18 15		35.54 35.44 35.41 35.52	93 99 54 338	12.4 13.8 14.7 17.5			<40 <40 <40 <40
						2.8												35.48						

DCC	DB 570*	123A_ESTUA	130762 (130762) Dublin Bay, 5km ESE Poolbeg Lighthouse - Composite Sample	25/05/2022 10:29	1967193	46	<1	101.2	12.2	2.1	46				101.6	0.6	34		35.58	88	12.5		<40	
				22/06/2022 09:39	1976895	48	<1	97.5	13.3	3.3	48					98.5	1	35		35.46	104	14		<40
				20/07/2022 09:38	1987197	12	<1	101	14.3	2.4	12					101.6	0.7	30		35.46	73	14.7		<40
				24/08/2022 09:39	1998824	<10	<1	101.5	16.2	1.9	< 50					102	0.7	17		35.44	327	16.6		<40
										2.3						35.46								

DCC	DB 580	123A_ESTUA	130772 (130772) Dublin Bay, Dún Laoghaire, 5km E of S Poolbeg Lighthouse - Composite Sample	25/05/2022 08:11	1967191	46	<1	100.9	12.1	0.8	46				101.5	0.1	26		35.52	87	12.5		<40	
				22/06/2022 08:18	1976893	33	<1	98.4	13.6	2.7	33					99.5	0.5	31		35.37	92	14.2		<40
				20/07/2022 08:19	1987195	11	<1	101.1	14.6	1.7	11					101.9	0.6	18		35.39	51	15.1		<40
				24/08/2022 07:00	1998822	<10	<1	100.3	16.2	2.7	< 50					100.8	0.7	11		35.38	334	16.6		<40
										2.2						35.39								

Number	19	19	1	18										
26/09/2022 15:25	2010394	41		52	Absent	Absent		8.2	Absent	32	Absent		Dogs	Normal

DCC

121_BEА_DCC

40539 (40539) Clontarf Yacht Club

13/06/2022 10:55	1973253	20	<1		Absent	Absent		8	Absent	33	Absent		No Comment	Normal
14/06/2022 10:10	1973982	63		24	Absent	Absent		8	Absent	32.4	Absent		No Comment	Normal
19/06/2022 16:35	1975648	10		2	Absent	Absent		8	Absent	32.9	Absent		No Comment	Normal
27/06/2022 10:10	1978148	272		59	Absent	Absent		8	Absent	30.6	Absent		Dogs	Normal
28/06/2022 10:50	1978747	74		24	Absent	Absent		7.8	Absent	29.9	Absent		No Comment	Normal
03/07/2022 15:15	1980648	52		18	Absent	Absent		8	Absent	32.1	Absent		No Comment	Normal
11/07/2022 11:15	1983590	31		6	Absent	Absent		8	Absent	29.6	Absent		No Comment	Normal
17/07/2022 14:35	1985961	10		73	Absent	Absent		8	Absent	32.5	Absent		No Comment	Normal
25/07/2022 11:10	1988498	346		420	Absent	Absent		8	Absent	32	Absent		No Comment	Normal
26/07/2022 10:15	1989016	52		10	Absent	Absent		8	Absent	32.3	Absent		No Comment	Normal
08/08/2022 11:00	1992545	41		9	Absent	Absent		8	Absent	31.9	Absent		No Comment	Normal
09/08/2022 13:30	1993356	10		3	Absent	Absent		8.1	Absent	31.6	Absent		No Comment	Normal
14/08/2022 00:00	1994915	10		4	Absent	Absent		8.1	Absent	32.1	Absent		No Comment	Normal
22/08/2022 11:55	1997790	203		66	Absent	Absent		8	Absent	31.4	Absent		Birds	Normal
23/08/2022 12:35	1998311	144		24	Absent	Absent		8.1	Absent	31.9	Absent		No Comment	Normal
29/08/2022 11:30	2000296	85		18	Absent	Absent		8	Absent	31.9	Absent		No Comment	Normal
06/09/2022 09:00	2003547	1722		460	Absent	Absent		7.9	Absent	24	Absent		Dogs	Normal
11/09/2022 12:55	2005216	134		93	Absent	Absent		8	Absent	30.5	Absent		No Comment	Normal
13/09/2022 14:05	2006139	218		400	Absent	Absent		8	Absent	31.9	Absent		Dogs	Normal

Number	19	19	1	18
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DCC

ASW 15

121P_BW

40538 (40538) Poolbeg Outfall Main Discharge

25/05/2022 07:05	1966962	322		480	Absent	Absent		7.8	Absent	29.8	Absent		No Comment	Normal
13/06/2022 12:55	1973245	960		630	Absent	Absent		7.6	Absent	27.8	Absent		No Comment	Normal
14/06/2022 10:20	1973974	3328		3400	Absent	Absent		7.6	Absent	26.5	Absent		No Comment	Normal
19/06/2022 15:30	1975640	5974		2000	Absent	Absent		7.4	Absent	20.4	Absent		No Comment	Normal
27/06/2022 10:40	1978140	710		250	Absent	Absent		7.9	Absent	29.7	Absent		No Comment	Normal
28/06/2022 11:20	1978739	192		690	Absent	Absent		7.9	Absent	33	Absent		No Comment	Normal
03/07/2022 13:45	1980640	6152		1255	Absent	Absent		7.6	Absent	26	Absent		No Comment	Normal
11/07/2022 10:30	1983582	4494		3800	Absent	Absent		7.7	Absent	26.4	Absent		No Comment	Normal
17/07/2022 13:50	1985953	10		1	Absent	Absent		7.9	Absent	32.5	Absent		Dogs	Normal
25/07/2022 10:25	1988490	1014		>2000	Absent	Absent		7.8	Absent	29.1	Absent		Birds	Normal
26/07/2022 10:55	1989008	3578		945	Absent	Absent		7.7	Absent	25.4	Absent		Birds	Normal
08/08/2022 09:05	1992537	1040		300	Absent	Absent		7.9	Absent	31.3	Absent		No Comment	Normal
09/08/2022 13:00	1993348	24066		>20000	Absent	Absent		7.6	Absent	23.2	Absent		No Comment	Normal
14/08/2022 00:00	1994907	1918		530	Absent	Absent		7.6	Absent	21.7	Absent		No Comment	Normal
22/08/2022 10:05	1997782	2492		88	Absent	Absent		7.7	Absent	28.4	Absent		No Comment	Normal
23/08/2022 09:05	1998303	426		610	Absent	Absent		7.8	Absent	30.7	Absent		Birds	Normal
29/08/2022 12:10	2000288	2028		660	Absent	Absent		7.7	Absent	24.7	Absent		Dogs & Birds	Normal
06/09/2022 09:20	2003539	538		470	Absent	Absent		8	Absent	29.4	Absent		No Comment	Normal
11/09/2022 12:10	2005208	150		390	Absent	Absent		7.9	Absent	31.7	Absent		Birds	Normal
13/09/2022 14:30	2006131	9208		580	Absent	Absent		7.4	Absent	21.9	Absent		No Comment	Normal

Number	19	19	19
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26/09/2022 14:10	2010395	5702		6300	Absent	Absent		7.7	Absent	25	Absent		No Comment	Normal
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19/06/2022 16:20	1975642	<10		2	Ectocarpus Present	Absent		8.1	Absent	34.9	Absent		No Comment	Ectocarpus present
27/06/2022 11:25	1978142	97		5	Absent	Absent		8	Absent	32.6	Absent		Dogs	Normal
28/06/2022 12:10	1978741	122		125	Absent	Absent		8	Absent	31.9	Absent		No Comment	Normal
03/07/2022 14:40	1980642	<10		28	Absent	Absent		8	Absent	30.9	Absent		No Comment	Normal
11/07/2022 10:05	1983584	31		9	Absent	Absent		8	Absent	33.8	Absent		Dogs & Birds	Normal
17/07/2022 14:20	1985955	<10	<1		Absent	Absent		8	Absent	34.1	Absent		Dogs	Normal
25/07/2022 09:50	1988492	63		13	Ectocarpus Present	Absent		8	Absent	34.2	Absent		Dogs & Birds	Ectocarpus present
26/07/2022 11:55	1989010	41		6	Absent	Absent		8.1	Absent	34.3	Absent		Dogs & Birds	Normal
08/08/2022 08:45	1992539	393		75	Absent	Absent		8	Absent	34.7	Absent		Dogs & Birds	Normal
09/08/2022 11:30	1993350	52		16	Absent	Absent		8	Absent	34.2	Absent		No Comment	Normal
14/08/2022 12:50	1994909	<10		2	Absent	Absent		8	Absent	33.9	Absent		Dogs	Normal
22/08/2022 09:35	1997784	52		11	Absent	Absent	9	8.1	Absent	33.1	Absent		Dogs & Birds	Normal
23/08/2022 09:45	1998305	97		17	Absent	Absent		8.1	Absent	33.4	Absent		Birds	Normal
29/08/2022 13:00	2000290	52		5	Absent	Absent		8.2	Absent	34.1	Absent		Dogs & Birds	Normal
06/09/2022 10:00	2003541	1553		250	Absent	Absent		8	Absent	32.8	Absent		Dogs	Normal
11/09/2022 12:50	2005210	1014		880	Absent	Absent		8.2	Absent	31.8	Absent		No Comment	Normal
13/09/2022 15:40	2006133	10		16	Absent	Absent		8.1	Absent	32.7	Absent		No Comment	Normal

Number 19 19 1 18

26/09/2022 13:40	2010397	86		20	Ectocarpus Present	Absent		8.2	Absent	33.1	Absent		Birds	Ectocarpus Present
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DCC ASW 18 121_BEА_DCC

40553 (40553) Merrion Strand (non-identified BW

25/05/2022 08:15	1966965	62		14	Absent	Absent		8	Absent	33.4	Absent		Dogs	Normal
13/06/2022 11:40	1973248	<10		3	Absent	Absent		8	Absent	34.2	Absent		No Comment	Normal
14/06/2022 11:10	1973977	41		25	Absent	Absent		8	Absent	34.8	Absent		No Comment	Normal
19/06/2022 16:40	1975643	<10		6	Ectocarpus Present	Absent		8.1	Absent	34.3	Absent		No Comment	Ectocarpus present
27/06/2022 11:45	1978143	10		2	Absent	Absent		8.1	Absent	33.1	Absent		Birds	Normal
28/06/2022 12:30	1978742	132		32	Absent	Absent		8	Absent	32.2	Absent		No Comment	Normal
03/07/2022 14:10	1980643	52		3	Ectocarpus Present	Absent		7.9	Absent	34.6	Absent		No Comment	Ectocarpus present
11/07/2022 09:50	1983585	41		13	Absent	Absent		8	Absent	33.9	Absent		Birds	Normal
17/07/2022 14:00	1985956	63		15	Absent	Absent		8.1	Absent	35.8	Absent		No Comment	Normal
25/07/2022 09:35	1988493	844		33	Ectocarpus Present	Absent		8	Absent	33.8	Absent		Dogs & Birds	Ectocarpus present
26/07/2022 12:20	1989011	<10		6	Ectocarpus Present	Absent		8.1	Absent	34	Absent		Birds	Ectocarpus present
08/08/2022 08:30	1992540	98		14	Ectocarpus Present	Absent		8	Absent	33.6	Absent		Birds	Ectocarpus present
09/08/2022 11:45	1993351	30		72	Absent	Absent		8	Absent	34.8	Absent		No Comment	Normal
14/08/2022 00:00	1994910	121		13	Absent	Absent		8	Absent	35.4	Absent		Dogs	Normal
22/08/2022 09:10	1997785	341		220	Absent	Absent		8	Absent	32.3	Absent		Birds	Normal
23/08/2022 10:05	1998306	677		75	Ectocarpus Present	Absent		8.1	Absent	33.4	Absent		Birds	Ectocarpus present
29/08/2022 13:25	2000291	41		11	Absent	Absent		8.1	Absent	33.9	Absent		Birds	Normal
06/09/2022 14:20	2003542	14136		>2000	Absent	Absent		8.1	Absent	31.4	Absent		No Comment	Normal
11/09/2022 12:35	2005211	246		80	Absent	Absent		8.2	Absent	29.4	Absent		No Comment	Normal
13/09/2022 16:00	2006134	41		20	Absent	Absent		8.4	Absent	32.8	Absent		No Comment	Normal

Number 19 19 19

26/09/2022 13:20	2010398	31		31	Absent	Absent		8.3	Absent	32.3	Absent		Birds	Normal
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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 2022

To comply with condition **4.11.1** of Licence D0034-01, 2 sub-samples of the Ringsend composite influent and effluent were analysed in 2022 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 2032237 taken on 30/11/2022.

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 : Chloroform was detected at 1.16 ug/l.

Pesticides / Herbicides :

Diuron was detected at 0.02 ug/l.

Glyphosate was detected at 0.318 ug/l.

Mecoprop was detected at 0.08 ug/l.

MCPA was detected at 0.70 ug/l.

Metals : The metals Lead (3.2 ug/l), Arsenic (1.7 ug/l), Copper (31 ug/l), Zinc (104 ug/l), Cadmium (0.07 ug/l), Mercury (0.052 ug/l), Chromium (2.5 ug/l), Selenium (1.0 ug/l), Molybdenum (4.4 ug/l), Barium (26.0 ug/l), Boron (0.152 mg/l), Cobalt (0.77 ug/l), Vanadium (0.94 ug/l) and Nickel (5.1 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 2032237 - 2022 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)	1.16 ug/l	
9	Xylenes (all isomers)	< 0.30 ug/l	
10	Ethyl Benzene	< 0.10 ug/l	
11	Toluene	< 0.10 ug/l	PAH's
12	Naphthalene	< 0.100 ug/l	
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	
17	Benzo(b)fluoranthene	< 0.100 ug/l	
18	Benzo(a)pyrene	< 0.100 ug/l	
	Acenaphthene	< 0.100 ug/l	
	Pyrene	< 0.100 ug/l	
	Anthracene	< 0.100 ug/l	
	Fluorene	< 0.100 ug/l	
	Phenanthrene	< 0.100 ug/l	
	Benz(a)anthracene	< 0.100 ug/l	
		< 0.100 ug/l	Total PAH's

No.	Compound	Result	Group of Compounds
19	Di(2-ethylhexyl)phthalate (DEHP)	< 50 ug/l	Plasticisers
	Diethyl Phthalate	< 50 ug/l	
20	Isodrin	< 8 ng/l	Pesticides
21	Dieldrin	< 9 ng/l	
22	Diuron	0.02 ug/l	
23	Isoproturon	< 0.01 ug/l	
24	Atrazine	< 0.029 ug/l	
25	Simazine	< 0.036 ug/l	
26	Glyphosate	0.318 ug/l	
27	Mecoprop	0.08 ug/l	
28	2,4-D	< 0.10 ug/l	
29	MCPA	0.70 ug/l	
30	Linuron	< 0.01 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	< 25.0 ug/l	Phenols
	m,p- Methylphenol	< 5.0 ug/l	Cresols
	o- Methylphenol	< 5.0 ug/l	
35	Lead (Total as Pb)	3.2 ug/l	Metals
36	Arsenic (Total as As))	1.7 ug/l	
37	Copper (Total as Cu)	31.0 ug/l	

No.	Compound	Result	Group of Compounds
38	Zinc (Total as Zn)	104 ug/l	
39	Cadmium (Total as Cd)	0.07ug/l	
40	Mercury (Total as Hg)	0.052 ug/l	
41	Chromium (Total as Cr)	2.5 ug/l	
42	Selenium (Total as Se)	1.00 ug/l	
43	Antimony (Total as Sb)	< 1.6 ug/l	
44	Molybdenum (Total as Mo)	4.4 ug/l	
45	Tin (Total as Sn)	< 1.6 ug/l	
	Organo-Tin	N/A	
	Tributyl Tin	N/A	
46	Barium (Total as Ba)	26.0 ug/l	
47	Boron (Total as B)	0.152 mg/l	
48	Cobalt (Total as Co)	0.77 ug/l	
49	Vanadium (Total as V)	0.94 ug/l	
50	Nickel (Total as Ni)	5.1 ug/l	
51	Fluoride (as F)	0.6 mg/l	General
52	Chloride (as Cl)	331 mg/l	
53	TOC (as C)	-	
54	Cyanide (Total as CN)	< 9 ug/l	
55	Sulphate (Total as SO4)	108 mg/l	
	(Sample 2032227)		
56	Conductivity	1560 uS/cm (20 degrees C)	Additional Tests
57	Hardness (mg/l CaCO3)	N/A	
58	pH	7.5	

Assessment of the Significance of the Discharge SW1 on Receiving Water Quality - 2022

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. 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	1.7
Chromium VI	0.6	2.5*
Copper	5	31.0
Cyanide	10	< 9
Diazinon	0.01	< 0.013
Dimethoate	0.8	< 0.020
Fluoride	1,500	600
Glyphosate	-	0.318
Linuron	0.7	< 0.01
Mancozeb	2	-
Monochlorobenzene	25	< 1.0
Phenols	8	< 25.0

Specific Pollutant Parameter	AA-EQS (ug/l)	Effluent 1909233 (01/12/21)
Toluene	10	<0.10
Xylenes	10	< 0.30
Zinc	40	104

* = Total Chromium which is > Chromium VI

Ringsend Influent Screening 2022

To comply with condition **4.11.2 of Licence D0034-01**, a sample of the Ringsend influent was analysed during 2022 (on 30/11/22) – 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 30/11/2022.

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:

2022– Influent Sample Reference 2032236 of 30/11/22.

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 3.36 ug/l.

Toluene was detected at 2.6 ug/l.

PAH's: Naphthalene (0.412 ug/l), Pyrene (0.121 ug/l), Fluorene (0.19 ug/l) and Phenanthrene (0.326 ug/l) were detected. All other PAH's were reported as below the detection limit.

Pesticides / Herbicides: Glyphosate was detected at 0.38 ug/l.

Phenols: Phenols were detected at 88.3 ug/l.

Metals: The metals Lead (5.1 ug/l), Copper (38.0 ug/l), Zinc (275 ug/l), Mercury (0.045 ug/l), Barium (34.0 ug/l), Cobalt (1 ug/l) and Vanadium (1.3 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 2032236 – 2022 PRTR 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)	< 1.00 ng/l	
8	Trichloromethane	3.36 ug/l	
9	Xylenes (all isomers)	< 3.00 ug/l	
10	Ethyl Benzene	< 1.0 ug/l	
11	Toluene	2.6 ug/l	
12	Naphthalene	0.412 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	0.121 ug/l	
	Anthracene	< 0.100 ug/l	
	Fluorene	0.19 ug/l	
	Phenanthrene	0.326 ug/l	
	Benzo(a)anthracene	< 0.100 ug/l	
		1.05 ug/l	Total PAH's
19	Di(2-ethylhexyl)phthalate (DEHP)	< 50 ug/l	Plasticisers
	Diethyl Phthalate	< 50.0 ug/l	
20	Isodrin	< 28 ng/l	Pesticides
21	Dieldrin	< 34 ng/l	
22	Diuron	< 0.10 ug/l	
23	Isoproturon	< 0.10 ug/l	
24	Atrazine	< 0.114 ug/l	
25	Simazine	< 0.142 ug/l	
26	Glyphosate	0.38 ug/l	
27	Mecoprop	< 0.16 ug/l	
28	2,4-D	< 2.00 ug/l	
29	MCPA	< 2.00 ug/l	
30	Linuron	< 0.10 ug/l	
31	Dichlobenil	< 17 ng/l	
32	2,6-Dichlorobenzamide	N/A	
	Diazinon	< 0.047ug/l	
	Dimethoate	< 0.029 ug/l	
33	PCB's (Sum of 7)	< 0.136 ug/l	PCB's
34	Phenols	88.3 ug/l	Phenols

No.	Compound	Result	Group of Compounds
	m,p- Methylphenol	< 5.00 ug/l	Cresols
	o- Methylphenol	< 5.00 ug/l	
35	Lead (Total as Pb)	5.1 ug/l	Metals
36	Arsenic (Total as As)	< 2.4 ug/l	
37	Copper (Total as Cu)	38 ug/l	
38	Zinc (Total as Zn)	275 ug/l	
39	Cadmium (Total as Cd)	< 0.7 ug/l	
40	Mercury (Total as Hg)	0.045 ug/l	
41	Chromium (Total as Cr)	< 5.1 ug/l	
42	Selenium (Total as Se)	< 6.0 ug/l	
43	Antimony (Total as Sb)	<16 ug /l	
44	Molybdenum (Total as Mo)	< 27.0 ug/l	
45	Tin (Total as Sn))	< 15.0 ug/l	
	Organo-Tin	N/A	
	Tributyl Tin	N/A	
46	Barium (Total as Ba)	34.0 ug/l	
47	Boron (Total as B)	< 0.600 mg/l	
48	Cobalt (Total as Co)	1 ug/l	
49	Vanadium (Total as V)	1.3 ug/l	
50	Nickel (Total as Ni)	< 10 ug/l	
51	Fluoride (as F)	0.6 mg/l	General
52	Chloride	324 mg/l	
53	TOC	N/A	
54	Cyanide	< 9 ug/l	
55	Sulphate (Total as SO4)	69.5 mg/l	
	(Sample 2032226)		
56	Conductivity	1590 uS/cm (20 degrees C)	Additional Tests

No.	Compound	Result	Group of Compounds
57	Hardness (mg/l CaCO ₃)	N/A	
58	pH	7.4	

Summary of Influent Lines Screening Results 2022:

2022 – Influent Lines:

To isolate the source of parameters detected in the Influent, samples were taken from the 4 main influent feeder lines on 30/11/2022 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).

2032491 : Dun Laoghaire – West Pier

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (3.86 ug/l).

The BTEX compound Toluene was detected at 0.54 ug/l.

The Herbicide compound Glyphosate was detected in this sample (0.132 ug/l).

Phenols (94.4 ug/l) and the cresol m,p-Methyl Phenol (72.1 ug/l) were detected in this sample.

The metals Lead (2.2 ug/l), Arsenic (2.4 ug/l), Copper (31 ug/l), Zinc (69 ug/l), Mercury (0.132 ug/l), Chromium (0.72 ug/l), Selenium (1.5 ug/l), Molybdenum (3.3 ug/l), Barium (31 ug/l), Boron (0.099 mg/l), Cobalt (0.17 ug/l), Vanadium (0.55 ug/l) and Nickel (2.1 ug/l) were detected.

See highlighted parameters in **Table 7.2.4**.

2032492: Dodder Valley Sewer - UCD FM-10

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (5.58 ug/l).

The BTEX compounds Xylenes (0.38 ug/l) and Toluene (0.5 ug/l) were detected.

The Herbicide compound Glyphosate was detected in this sample (0.117 ug/l).

Phenols were detected at 149 ug/l and the cresol m,p- Methyl Phenol at 136 ug/l.

The metals Lead (1.7 ug/l), Arsenic (1.3 ug/l), Copper (32 ug/l), Zinc (72 ug/l), Cadmium (0.09 ug/l) Mercury (0.038 ug/l), Chromium (0.93 ug/l), Selenium (0.84 ug/l), Tin (2.5 ug/l), Barium (24 ug/l), Cobalt (0.28 ug/l), Vanadium (0.58 ug/l) and Nickel (1.6 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 (4.84 ug/l).

The BTEX compound Toluene was detected at 0.72 ug/l.

The Herbicide compound Glyphosate was detected at 0.149 ug/l.

Phenols (110 ug/l) and the cresol m,p- Methyl Phenol (192 ug/l) were detected.

The metals Lead (2.0 ug/l), Arsenic (1.2 ug/l), Copper (65 ug/l), Zinc (70 ug/l), Cadmium (0.08 ug/l) Chromium (6.8 ug/l), Selenium (0.77ug/l), Tin (3.0 ug/l), Barium (48 ug/l), Boron (0.074 mg/l), Cobalt (0.31 ug/l), Vanadium (0.60 ug/l) and Nickel (6.7 ug/l) were detected in this sample.

See highlighted parameters in **Table 7.2.4**.

1909415: Ringsend – Main Lift Pumping Station

1 parameter from the Volatile Organic Carbons suite was detected in this sample – Trichloromethane (5.10 ug/l).

The BTEX compounds Benzene (0.33 ug/l), Toluene (1.79 ug/l), Ethyl Benzene (0.27 ug/l) and Xylenes (0.54 ug/l) were all detected.

The PAHs Naphthalene (0.623 ug/l) and Phenanthrene (0.157 ug/l) were detected in this sample.

The Herbicide compound Glyphosate was detected in this sample (0.128 ug/l)

Phenols (49.5 ug/l) and the cresol m,p-Methylphenol (114 ug/l) were detected in this sample.

The metals Lead (0.65 ug/l), Arsenic (2.1 ug/l), Copper (23 ug/l), Zinc (32 ug/l), Mercury (0.032 ug/l), Chromium (0.65 ug/l), Antimony (1.6 ug/l), Molybdenum (4 ug/l), Barium (25 ug/l), Boron (0.154 mg/l), Cobalt (0.35 ug/l), Vanadium (0.58 ug/l) and Nickel (1.9 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 - 2022 PRTR Screening

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

No.	Compound	2032491 Dun Laoire West Pier	2032492 UCD FM 10 (Dodder)	2032493 Sutton Sump	2032494 Ringsend Main Lift
1.	Benzene	<0.50 ug/l	<0.10 ug/l	<0.50 ug/l	0.33 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)	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
8	Trichloromethane	3.86 ug/l	5.58 ug/l	4.84 ug/l	5.10 ug/l
9	Xylenes (all isomers)	<1.50 ug/l	0.38 ug/l	<1.50 ug/l	0.54 ug/l
10	Ethyl Benzene	<0.50 ug/l	<0.10 ug/l	<0.50 ug/l	0.27 ug/l
11	Toluene	0.54 ug/l	0.5 ug/l	0.72 ug/l	1.79 ug/l
12	Naphthalene	<0.50 ug/l	<0.50 ug/l	<0.50 ug/l	0.623 ug/l

No.	Compound	2032491 Dun Laoire West Pier	2032492 UCD FM 10 (Dodder)	2032493 Sutton Sump	2032494 Ringsend Main Lift
13	Fluoranthene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
14	Benzo(k)fluoranthene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100ug/l
15	Benzo(ghi)perylene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
16	Indeno(1,2,3-c,d)pyrene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
17	Benzo(b)fluoranthene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
18	Benzo(a)pyrene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
	Acenaphthene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
	Pyrene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
	Anthracene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
	Fluorene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	<0.100 ug/l
	Phenanthrene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	0.157 ug/l
	Benzo(a)anthracene	<0.100 ug/l	<0.500 ug/l	<0.100 ug/l	< 0.100 ug/l
	Total PAH's	<0.500ug/l	<0.500 ug/l	<0.500 ug/l	0.78 ug/l
19	Di(2-ethylhexyl)phthalate (DEHP)	< 50 ug/l	< 50 ug/l	< 50 ug/l	< 50 ug/l
	Di-ethylphthalate	< 50 ug/l	< 50 ug/l	< 50 ug/l	< 50 ug/l
20	Isodrin	<28 ng/l	< 28 ng/l	< 28 ng/l	< 28 ng/l
21	Dieldrin	<34 ng/l	< 34 ng/l	< 34 ng/l	< 34 ng/l
22	Diuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.05 ug/l
23	Isoproturon	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
24	Atrazine	<0.114 ug/l	< 0.114 ug/l	< 0.114 ug/l	< 0.114 ug/l
25	Simazine	<0.142 ug/l	< 0.142 ug/l	< 0.142 ug/l	< 0.142 ug/l
26	Glyphosate	0.132 ug/l	0.117ug/l	0.149 ug/l	0.128 ug/l
27	Mecoprop	<1.60 ug/l	< 1.60 ug/l	< 1.60 ug/l	< 1.60 ug/l
28	2,4-D	<2.00 ug/l	< 2.00 ug/l	< 2.00 ug/l	< 2.00 ug/l
29	MCPA	<2.00 ug/l	< 2.00 ug/l	< 2.00 ug/l	< 2.00 ug/l
30	Linuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
31	Dichlobenil	<17 ng/l	< 17 ng/l	< 17 ng/l	< 17 ng/l

No.	Compound	2032491 Dun Laoire West Pier	2032492 UCD FM 10 (Dodder)	2032493 Sutton Sump	2032494 Ringsend Main Lift
32	2,6-Dichlorobenzamide	N/A	N/A	N/A	N/A
	Diazinon	<0.047 ug/l	<0.047 ug/l	<0.047 ug/l	<0.047 ug/l
	Dimethoate	<0.029 ug/l	<0.029 ug/l	<0.029 ug/l	<0.029 ug/l
33	PCB's (Sum of 7)	< 0.136 ug/l	< 0.136 ug/l	< 0.136 ug/l	< 0.136ug/l
34	Phenols	94.4 ug/l	149 ug/l	110 ug/l	49.5 ug/l
34	m,p- Methylphenol	72.1 ug/l	136 ug/l	192 ug/l	114 ug/l
	o- Methylphenol	< 5 ug/l	< 5 ug/l	< 5 ug/l	< 5 ug/l
35	Lead	2.2 ug/l	1.7 ug/l	2.0 ug/l	0.65ug/l
36	Arsenic	2.4 ug/l	1.3 ug/l	1.2 ug/l	2.1 ug/l
37	Copper	31 ug/l	32 ug/l	65 ug/l	23 ug/l
38	Zinc	69 ug/l	72 ug/l	70 ug/l	32 ug/l
39	Cadmium	<0.07 ug/l	0.09 ug/l	0.08 ug/l	< 0.07 ug/l
40	Mercury	0.132 ug/l	0.038 ug/l	< 0.010 ug/l	0.032 ug/l
41	Chromium	0.72 ug/l	0.93 ug/l	6.8 ug/l	0.65 ug/l
42	Selenium	1.5 ug/l	0.84 ug/l	0.77 ug/l	< 0.60 ug/l
43	Antimony	<1.6 ug/l	<1.6 ug/l	<1.6 ug/l	1.6 ug/l
44	Molybdenum	3.3 ug/l	<2.7 ug/l	<2.7 ug/l	4 ug/l
45	Tin (Total)	<1.5 ug/l	2.5 ug/l	3.0 ug/l	< 1.5 ug/l
	Organo Tin	N/A	N/A	N/A	N/A
	Tri-Butyl Tin	N/A	N/A	N/A	N/A
46	Barium	31 ug/l	24 ug/l	48 ug/l	25 ug/l
47	Boron	0.099 mg/l	< 0.060mg/l	0.074 mg/l	0.154 mg/l
48	Cobalt	0.17 ug/l	0.28 ug/l	0.31 ug/l	0.35 ug/l
49	Vanadium	0.55 ug/l	0.58 ug/l	0.60 ug/l	0.58 ug/l
50	Nickel	2.1 ug/l	1.6 ug/l	6.7 ug/l	1.9 ug/l
51	Fluoride	0.5 mg/l	0.5 mg/l	0.5 mg/l	0.6 mg/l
52	Chloride	75 mg/l	49.5 mg/l	122 mg/l	480 mg/l

No.	Compound	2032491 Dun Laoire West Pier	2032492 UCD FM 10 (Dodder)	2032493 Sutton Sump	2032494 Ringsend Main Lift
53	TOC	-	-	-	-
54	Cyanide	< 9 ug/l	< 9 ug/l	< 9 ug/l	< 9 ug/l
55	Sulphate (Total as SO4)	45.8 mg/l	33.9 mg/l	17 mg/l	105 mg/l
		(Sample 2032486)	(Sample 2032487)	(Sample 2032488)	(Sample 2032489)
55	Conductivity	752	717	914	1514
56	Hardness (mg/l CaCO3)	-	-	-	-
57	pH	7.6	7.6	7.3	7.6

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 **123,924** cubic metres of leachate was received in 2022 as tabulated below:

Landfill Source	Local Authority	Leachate Annual Volume 2022 (m ³)	Daily PE *	Daily % Influent PE Load*
Ballynagran (by tanker)	Wicklow County Council	17,617	215	0.0117%
Kerdiffstown (by tanker)	Kildare County Council	13,048	159	0.0086%
Bord Na Mona Drehid Landfill (by tanker)	Kildare County Council	4,703	57	0.0031%
Knockharley Landfill (by tanker)	Meath County Council	4,303	52	0.0028%
Dunsink (to sewer)	Fingal County Council	84,253	1,026	0.0558%
Total		123,924		0.082%

The daily leachate PE load represents **0.082%** of the average daily calculated PE load in 2022 (**1,839,660 PE**)

* PE = m³/year /0.225 x365

Appendix 7.4 - Final Effluent Toxicity Assessment

See attached Effluent Toxicity Report for a sample 2032247 taken on 30/11/2022.

This sample complied with the EPA WWTP Licence.

Toxicity Testing Report on behalf of
TMS Environment Ltd.

Sampling Date – 30th November 2022

Sample Details

TMS Environment Limited requested toxicity testing on behalf of their client, Dublin City Council, on their final effluent in November 2022.

The customer collected a composite sample over a 24 hour period on Wednesday, the 30th of November and the sample was received by Envva on Friday the 2nd of December.

The sample was labelled as "Ringsend SBR Effluent", 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
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Certification Details

Certificate Number	22490632001202	Enva Lab ID	2249063
Date Received	02 nd December 2022	Certificate Date	20 th January 2023
Order Number	N/A	Test Date	6 th December 2022

Sample Information

Sampled By	Customer
Sampling Procedure	Composite
Storage Conditions	Refrigerated
Temperature (°C)	24.5
pH (at 25°C)	6.64
Dissolved Oxygen (mg/L)	3.98
Dissolved Oxygen (% Saturation)	47.72
Conductivity (µs/cm at 25°C)	1800

Aquatic Toxicity Test Results



Test Parameters	Concentration (% Vol./Vol.)	Toxic Units	95% Confidence Limits (% Vol./Vol.)	Method of Calculation
30 min EC50 to <i>Vibrio fischeri</i>	100	<1	N/A	Microtox
48 LC50 to <i>Brachionus plicatilis</i>	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 Éireann Orange and Red Alerts affecting Ringsend WWTP

In 2022, there were 3 no. days discounted due to Met Éireann Orange alerts.

- i. Thunderstorms
15/08/2022
19/10/2022
- ii. Rainfall
27/10/2022

There were no days discounted due to Met Éireann Red Alerts in 2022.