Annual Environmental Report

2020

Ringsend

D0034-01

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7 APPENDICES

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0034-01, Ringsend, in County Dublin in accordance with the requirements of the wastewater discharge licence for the agglomeration.

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 E.coli

The effluent parameters pH and Toxicity complied with the ELVs during 2020.

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
Priority Substances Assessment	Yes - **Appendix 7.2**
Toxicity/Leachate Management	Yes - **Appendix 7.3**
Toxicity of Final Effluent	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
COD-Cr mg/l	231	1219	514.55
Total Phosphorus (as P) mg/l	97	9.09	5.06
Total Nitrogen mg/l	97	58.5	38.44
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	138	507	253.97
Suspended Solids mg/l	231	756	250.98
Hydraulic Capacity	N/A	832,269	458,641

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 - RINGSEND WWTP

	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Total N (mg/l)	pH	Toxicity (TU)	Comment
WWDL ELV (*Schedule A*)	25	125	35	1	10	6-9	5	
ELV with Condition 2 Interpretation included	50	250	87.5	1.2	12.0	-	-	
Number of sample results	138 **	231***	231***	97 *	97*	231***	1	Composite samples taken except for toxicity
Number of sample results above WWDL ELV	69	52	146	97	94	0	0	
Number of sample results above ELV with Condition 2 Interpretation included	20	11	39	96	92	0	0	
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	3.73	20.49	N/A	N/A	
Overall Compliance (Pass/Fail)	**Fail**	**Fail**	**Fail**	**Fail**	**Fail**	Pass	Pass	

**96-110 samples therefore 9 non-complaint 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-complaint 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-complaint 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

	DIN (mg/l N)	Ammonia (mg/l N)	Ortho-Phosphate (mg/l P)	OFG (mg/l)	E.coli (MPN/100ml)	Enterococci (CFU/100 ml)	Colour (Hazen)	Comment
WWDL ELV (*Schedule A*)	-	-	-	-	100,000	-	-	
ELV with Condition 2 Interpretation included	-	-	-	-	120,000	-	-	
Number of sample results	231	231	231	102	58* (SPOT)	47* (SPOT	231	*Licence specifies 1st May to 31st August for E. Coli compliance
Number of sample results above WWDL ELV/not achieving min % reduction	-	-	-	-	4	-	-	Composite sample taken for chemistry parameters
Number of sample results above ELV with Condition 2 Interpretation included	-	-	-	-	2	-	-	
Annual Mean (for parameters where a mean ELV applies)								
Overall Compliance (Pass/Fail)	N/A	N/A	N/A	N/A	**Fail****	N/A	N/A	** 2 samples exceeded 120,000 MPN/100ml during the specified period (01/05/18 - 31/08/18)

Cause of Exceedance(s):

The non-compliances were due to overloading and no P removal treatment on site.

Significance of Results:

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 69 samples non-compliant with the ELV in relation to cBOD. The non-compliance is due to overloading. There were 52 samples non-compliant with the ELV in relation to COD. The non-compliance is due to overloading. There were 146 samples non-compliant with the ELV in relation to TSS. The non-compliance is due to overloading. There were 97 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 non-compliant with the ELV set in the wastewater discharge licence for Faecal Coliforms (E. Coli) monitored during the specified period 01/05/20 to 31/08/20 (4 breaches). Two breaches of the Condition 2 ELV occurred on the 27/07/2020 (198,630 MPN/100ml) and the 17/08/2020 (241,960 MPN/100 ml). The impact on receiving waters is assessed further in Section 2.3.

Discounting of Results:

There was no reported discounting of results in 2020.

2.1.3 AMBIENT MONITORING SUMMARY - RINGSEND WWTP

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	*Irish Grid Reference*	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Upstream monitoring point	***Liffey U/S Islandbridge***	Unknown	No	No	No	No	Good	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 Sections below. Liffey Estuary tidal

Ambient Monitoring Point from WWDL (or as agreed with EPA)	*Irish Grid Reference*	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Downstream monitoring points	***Liffey Estuary Lower***	Unknown	No	No	No	No	Good	Yes Impacts in the near field and the plume of the sewage discharge – See Section 2.1.3.1 below. Liffey Estuary tidal
Downstream monitoring points	***Tolka Estuary***	Unknown	No	No	No	No	Moderate	Yes Impacts of the sewage discharge plume and the Tolka River inflow – see reports below. Tolka Estuary tidal.
Downstream monitoring points	***Dublin Bay***	Unknown	No	No	No	No	Good	Occasional elevated DIN concentrations. See **Section 2.1.3.1** below.
Downstream monitoring points	***Bathing Waters*** Dollymount Bathing Zone Sandymount	Unknown	**Yes**	No	No	No	**2020 EPA Predicted.** **Good** **Sufficient**	See **Section 2.1.3.1** below.

2.1.3.1 AMBIENT MONITORING PARAMETER SUMMARY-RINGSEND WWTP

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

Significance of Results:

- The Ringsend WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.1.2.
- The primary discharge from the wastewater treatment plant does have an observable negative impact on the water quality in the near field of the discharge and in the Liffey and Tolka Estuaries.
- The primary discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status in the Liffey Estuary. The DIN limit for Dublin Bay has been exceeded on occasion at 4 locations in 2020.
- Other potential causes of deterioration in water quality relevant to this area are upstream riverine pollutants, combined sewer overflows, exfiltration from sewers and misconnections to surface water sewers in the large urban agglomeration.

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

- 9 Ambient Surface Waters **(ASW2 – ASW10)** covering sampling points in the lower Liffey Estuary in the near field of the discharge **(ASW2 to ASW5)**, and points on the River Liffey and River Tolka **(ASW6 to ASW10 - Surface and Depth samples)**
- 11 additional monitoring points on the Liffey and Tolka Estuaries **(DB 020 to DB 420 – Surface, Depth and Composite samples)**
- 9 monitoring locations in Dublin Bay **(DB 430 to DB 610 – Surface, Depth and Composite samples)**
- 8 shoreline locations, 3 of which are EC designated bathing waters -Dollymount Bathing Zone, Sandymount and Merrion Strands **(ASW 11 to ASW 18)**

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

See all monitoring data for 2020 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 2020 are tabulated below:

Survey No. and Month 2020	Date	High Tide Time	Height (m OD)	Low Tide Time	Height (m OD)	Tidal Status during Survey
1. April	**Cancelled**					
2. May	06/05/20	11.26	4.17	17.17	0.13	Mid-Flow to Mid-Ebb
	07/05/20	12.12	4.25	18.00	0.10	Mid-Flow to Mid-Ebb
	20/05/20	11.16	3.70	17.03	1.07	Mid-Flow to Mid-Ebb
3. June	03/06/20	10.15	3.99	16.10	0.48	Mid Flow to Mid-Ebb
	04/06/20	11.09	4.08	16.59	0.42	Mid-Flow to Mid-Ebb
4. July	15/07/20	08.15	3.36	14.03	1.39	High to Ebb
	16/07/20	09.13	3.39	14.59	1.36	High to Ebb
5. August	12/08/20	06.04	3.36	12.07	1.43	Mid-Flow to Mid-Ebb
	27/08/20	07.09	3.60	12.58	1.28	Mid-Flow to Low
6. September	17/09/20	12.14	4.11	05.33	0.25	Mid-Flow to High

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 2020 at the designated locations in the licence, tabulated below:

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

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

This shows compliance with temperature, dissolved oxygen (lower) and dissolved oxygen (upper) at all locations on all survey dates.

All BOD values were compliant with transitional water quality on all dates except for :

- ASW 7S – BOD value was 7mg/l O_2 on 04/06/20.
- ASW 8S – BOD value was 7 mg/l O_2 on 06/05/20.

Exceedances of median Molybdate Reactive Phosphate (MRP) standards occurred in the near field of the Ringsend discharge at ASW2, ASW3, ASW4 and ASW5 (Surface samples) and at ASW2, ASW 3, ASW 4 (Depth samples).

The non-compliant median MRP results were as follows :

Location	MRP 2020 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)	**206 ug/l as P**		**Close to SW1 Outfall within the Mixing Zone**
ASW2 (Depth)	**56 ug/l as P**		**Close to SW1 Outfall within the Mixing Zone**
ASW3 (Surface)	**146 ug/l as P**		**Close to SW1 Outfall within the Mixing Zone**
ASW3 (Depth)	**59 ug/l as P**		**Close to SW1 Outfall within the Mixing Zone**
ASW4 (Surface)	**74 ug/l as P**		**Close to SW1 Outfall within the Mixing Zone**
ASW4 (Depth)	**47 ug/l as P**		**Close to SW1 Outfall within the Mixing Zone**
ASW5 (Surface)	**67 ug/l as P**		**Outside the Mixing Zone Upstream River Pollution**

2.1.3.1.2 Marine Monitoring – 2020 - 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 20202, 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 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 320 (Surface)** on 06/05/20 **(>7 mg/l O2**) and 27/08/20 **(6 mg/l O2).**
- **DB 320 (Depth)** on 15/05/19 **(>7 mg/l O2).**

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

Molybdate Reactive Phosphate (MRP) median exceedances occurred at **7** locations as follows:

Location	MRP 2020 Median Result	SI .No. 272 of 2009 (as amended) / S.I. No. 77 of 2019 Standard	Comment
	Liffey Estuary	< 40ug/l P(med) < 60 ug/l P (med)	
DB020 (Depth)	**57 ug/l P**		SW1 Discharge and riverine impacts
DB410 (Surface)	**69 ug/l P**		SW1 Discharge
DB420 (Composite)	**47 ug/l P**		SW1 Discharge and riverine impacts
	Tolka Estuary		
DB320 (Surface)	**75 ug/l P**		SW1 Discharge and riverine impacts
DB320 (Depth)	**93 ug/l P**		SW1 Discharge and riverine impacts
DB330 (Composite)	**69 ug/l P**		SW1 Discharge and riverine impacts
DB340 (Composite)	**60 ug/l P**		SW1 Discharge and riverine impacts
DB350 (Composite)	**69 ug/l P**		SW1 Discharge and riverine impacts

2.1.3.1.3 Marine Monitoring – Dublin Bay, 2020- Points Agreed with the EPA

A total of 4 surveys were carried out at 9 locations in Dublin Bay during 2020. 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 20202 shows full compliance with temperature, dissolved oxygen (lower) and dissolved oxygen (upper).

The median chlorophyll Good to Moderate limit (cold acetone extraction < 5.0 ug/l) was complied with at all 9 sampling locations in 2020.

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

DIN exceedances occurred at 4 locations as follows :

- **DB 610 :** DIN concentration (876 ug/l) in Composite Sample taken on 07/05/20.
- **DB 450 :** DIN concentration (341 ug/l) in Composite Sample taken on 12/08/20.
- **DB 550** : DIN concentration (546 ug/l) in Composite Sample taken on 12/08/20.
- **DB 570*** : DIN concentration (253 ug/l) in Composite Sample taken on 03/06/20.

There were **no other impacts** on regulated coastal and Irish Sea water quality during the period when surveys were carried out in 2020.

2.1.3.1.4 Shoreline Monitoring – 2020 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 2020 bathing season :

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

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

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

In Summary:

Bathing water status is determined by the EPA for the year 2020. 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 the occurrences of Ectocarpus at ASW 16 (Half Moon), ASW 17 (Sandymount Strand) and ASW 18 (Merrion Strand).

Designated bathing water at Dollymount (Bathing Zone) will be allocated **GOOD status** in 2020 (predictive)
Designated bathing waters at Sandymount will be allocated **SUFFICIENT status** in 2020 (predictive).

Site Location	ASW 12	ASW 17
No. of samples	19	19
2020 Annual Status (predicted)	Good	Poor

The remaining 6 locations monitored are not designated bathing waters.

Monitoring data for non-designated bathing waters between 02/06/20 and 14/09/20 is included in **Appendix 7.1.5.**

2020 - 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	41,703,629.21	5,775,978.93	86.1
COD	84,331,926.87	20,478,248.45	75.7
SS	41,563,321.07	10,884,945.96	73.8
TN	6,187,700.09	4,007,063.09	35.2
TP	821,408.60	672,227.20	18.2

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

2.1.4.2 Treatment Capacity Report Summary - Ringsend WWTP

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

RINGSEND WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	959,040
DWF to the Treatment Plant (m^3/day)	274,076
Current Hydraulic Loading - annual max (m^3/day)	832,269
Average Hydraulic loading to the Treatment Plant (m^3/day)	458,641
Organic Capacity - Design / As Constructed (PE)	1,640,000
Organic Capacity - Current loading (PE) - peak week load	2,278,887
Organic Capacity – Remaining (PE)	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

No flow or BOD data was discounted by IW for 2020.

2.1.5 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 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*	177	m^3/yr	2.15 PE/day from Volume	<0.0002 % (PE)	Yes	Yes	Yes
Industrial / Commercial Sludge	17,505	m^3/yr	212.57 PE/day from Volume	0.011 % (PE)	Yes	Yes	Yes
Landfill Leachate (delivered by tanker) – Ballynagran Landfill – Wicklow County Council	20,024	m^3/yr	243.16 PE/day from Volume	0.013 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Kerdiffstown Landfill – Kildare County Council	12,572	m^3/yr	152.67 PE/day from Volume	0.008 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Knockharley Landfill – Meath County Council	12,298	m^3/yr	149.34 PE/day from volume	0.008 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Domestic /Septic Tank Sludge*	177	m^3/yr	2.15 PE/day from Volume	<0.0002 % (PE)	Yes	Yes	Yes

Input type	Quantity	Unit	P.E.**	% of load to WWTP ***	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Landfill Leachate (delivered by tanker) – Drehid Landfill Bord Na Mona Wicklow County Council	9,214	m^3/yr	111.89 PE/day from Volume	0.006 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by sewer network) Dunsink Civic Amenity – Fingal County Council	151,578	m^3/yr	1,840.66 PE/ day from Volume	0.096 % (PE)	Yes	Licence consent	Yes

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

** PE = m^3/year /0.225 x366

*** % PE Load to WWTP = Daily Leachate PE/ Mean Daily Influent PE X100 (*Mean Daily Influent PE: 1,899,072 PE*)

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

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

Dublin City Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Blocked Sewer	0	1

South Dublin County Council Functional Area

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Blocked Sewer	0	1

Fingal County Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
3	Blocked Sewer	0	3

Dún Laoghaire Rathdown County Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
3	Blocked Sewer	0	3

Meath County Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
2	Blocked Sewer	0	2

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 or fax. Some incidents which arise in the agglomeration are recorded by Irish Water but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	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	Emergency overflow caused by power failure	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
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 maintenance at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Breach of ELV	WWTP biological sludge issue	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Breach of ELV	WWTP biological sludge issue	1	No	Yes
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No
Other	Broken Sewer Pipe	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Adverse Weather	1	No	Yes
Spillage	Adverse Weather	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Spillage	Network Infrastructure	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Plant or equipment breakdown at WWTP	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Plant or equipment breakdown at WWTP	1	No	Yes
Spillage	Blocked Sewer	1	Yes	Yes
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	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	Screen maintenance issue	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Emergency overflow 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	Inadequate Operational Procedures/Training	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Broken Sewer Pipe	1	No	Yes
Uncontrolled release	Emergency overflow caused by pump failure	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	Blocked Sewer	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	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		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	Broken Sewer Pipe	1	No	Yes
Uncontrolled release	Broken Sewer Pipe	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	Adverse Weather	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	Adverse Weather	1	No	Yes

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

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	**95**
Number of Incidents reported to the EPA via EDEN in 2020	**95**
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 in the subsections below.

4.1.1 SWO IDENTIFICATION AND INSPECTION SUMMARY REPORT

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CS0167DCC	317890, 231357	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CS01DCC	314768, 234218	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CS02DCC	314662, 234251	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CS049DCC	313785, 234372	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CS082	317299, 235411	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO100DCC	313421, 232721	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO106DCC	319384, 231534	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO10DCC	313520, 233817	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO11DCC	316105, 234412	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO12DCC	316024, 234384	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO13DCC	314901, 234185	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO14DCC	316859, 234353	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO15DCC	312961, 234299	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO168DCC	318139, 233413	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO169DCC	317909, 232497	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO16DCC	312963, 234299	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO170DCC	317699, 231474	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO171DCC	317550, 232447	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO173DCC	317827, 231358	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO174DCC	317852, 231363	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO175DCC	317743, 231303	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO176DCC	317639, 232519	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO177DCC	314416, 231521	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO178DCC	314413, 231521	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO179DCC	318132, 233429	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO180DCC	319921, 230594	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO181DCC	315892, 232164	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO182DCC	314820, 232377	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO183DCC	316790, 230086	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO184DCC	317824, 232486	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO185DCC	316609, 232018	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO186DCC	317881, 232507	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO187DCC	316306, 230383	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO188DCC	314451, 230170	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO18DCC	316949, 236161	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO190DCC	317176, 230639	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO197DCC	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO19DCC	316949, 236161	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO20DCC	313520, 233817	No	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO21DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO23DCC	316113, 234458	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO24DCC	314414, 234303	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO25DCC	314583, 234276	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO27DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO28DCC	313355, 233720	No	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO29DCC	315432, 234237	No	High	Not Meeting	Unknown	Unknown	Unknown
CSO31DCC	315899, 236809	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO33DCC	317179, 234428	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO34DCC	317179, 234428	No	High	Meeting	Unknown	Unknown	Unknown
CSO35DCC	317026, 234337	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO36	317234, 234294	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO37DCC	312064, 233584	No	Medium	Meeting	Unknown	Unknown	Unknown
CSO38DCC	312691, 234330	No	High	Meeting	Unknown	Unknown	Unknown
CSO3DCC	315867, 234360	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO40DCC	309745, 234945	No	High	Meeting	Unknown	Unknown	Unknown
CSO41DCC	314987, 234140	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO43DCC	313368, 233724	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO44DCC	316949, 236161	Yes	Medium	Meeting	Unknown	Unknown	Unknown
CSO44DCC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO45DCC	315554, 234257	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO46DCC	315724, 234302	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO47DCC	315279, 234194	Yes	High	Not Meeting	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO48DCC	315554, 234208	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO4DCC	317062, 236049	No	High	Meeting	Unknown	Unknown	Unknown
CSO50DCC	315554, 234208	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO50DCC	317992, 233867	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO51DCC	315554, 234208	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO53DCC	309745, 234945	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO54DCC	312990, 233664	Yes	Medium	Meeting	Unknown	Unknown	Unknown
CSO56DCC	313023, 233673	Yes	Medium	Meeting	Unknown	Unknown	Unknown
CSO58DCC	313061, 233674	Yes	Medium	Meeting	Unknown	Unknown	Unknown
CSO59DCC	314244, 234312	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO60DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO61DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO62DCC	317392, 234298	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO65DCC	313737, 234202	Yes	Medium	Meeting	Unknown	Unknown	Unknown
CSO66DCC	313785, 234372	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO67DCC	310369, 234145	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO68DCC	310276, 234429	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO69DCC	310802, 234027	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO6DCC	315554, 234208	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO70DCC	310261, 234248	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO71DCC	310501, 234093	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO72DCC	312634, 233620	Yes	High	Not Meeting	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO73DCC	318619, 235576	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO74DCC	312548, 233667	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO76DCC	TBC, TBC	Yes	Unknown	Meeting	Unknown	Unknown	Unknown
CSO77DCC	314493, 234257	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO78DCC	314688, 234206	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO79DCC	314332, 234279	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO7DCC	315554, 234208	Yes	Medium	Meeting	Unknown	Unknown	Unknown
CSO80DCC	314205, 234283	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO83DCC	313949, 234326	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO84DCC	315143, 234129	Yes	High	Not Meeting	Unknown	Unknown	Unknown
CSO85DCC	315143, 234129	Yes	High	Meeting	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO87DCC	316865, 234654	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO88DCC	317775, 234381	No	High	Meeting	Unknown	Unknown	Unknown
CSO89DCC	317775, 234381	Yes	High	Meeting	Unknown	Unknown	Unknown
CSO8DCC	316176, 236728	Yes	Medium	Not Meeting	Unknown	Unknown	Unknown
CSO90DCC	311589, 231731	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO91DCC	311398, 230549	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO92DCC	313440, 232441	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO93DCC	319319, 231456	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO94DCC	310380, 232486	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO95DCC	318880, 233947	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO97DCC	319373, 230608	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
CSO98DCC	319373, 230608	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
CSO9DCC	316056, 236694	Yes	Medium	Meeting	Unknown	Unknown	Unknown
DLRCC B4 4 004D	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B4 R 001D	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B4 R 005DL	TBC, TBC	No	Unknown	Not Meeting	Unknown	Unknown	Unknown
DLRCC B4 R 008D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 4 020D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 4 022D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 001D	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 003D	318107, 232850	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 005	316697, 230047	No	Medium	Not Meeting	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
DLRCC B5 R 007D	314831, 229661	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 010D	316969, 229569	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 011D	316989, 229389	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 017D	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 018D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 019D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 021D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 025D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC B5 R 026D	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
DLRCC/B5/R/004	316783, 230085	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
FINGAL- SW53	309614, 238262	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
FINGAL-SW50	306076, 243269	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
FINGAL-SW51	308577, 238545	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
FINGAL-SW52	308318, 238766	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
FINGAL-SW54	308007, 238729	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
FINGAL-SW55	308950, 237336	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
FINGAL-SW56	306505, 237441	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS01	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS02	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS03	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS04	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS05	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
SDCCPS06	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS07	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS08	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS09	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS10	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS13	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS14	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS15	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS16	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS17	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCPS19	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
SDCCPS21	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCPS22	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCSN01	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCSWO01	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SDCCSWO04	310571, 227213	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
SDCCSWO05	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCSWO06	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCSWO08	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCSWO09	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCSWO10	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SDCCSWO12	314778, 228519	Yes	Medium	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
SW004	312639, 228184	Yes	Medium	Not yet Assessed	Unknown	Unknown	Unknown
SW096	313725, 232628	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SW099	313291, 229848	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SW103	310784, 232218	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SW107	318741, 232076	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SW173	316956, 230477	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SW2	320332, 233800	Yes	Unknown	Not yet Assessed	Unknown	1,965,103	Monitored
SW201	313218, 233704	Yes	High	Not Meeting	Unknown	Unknown	Unknown
SW233	309737, 229575	Yes	Medium	Not yet Assessed	Unknown	Unknown	Unknown
SW260	317562, 230767	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SW269	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
SW269	316941, 229707	Yes	Medium	Not yet Assessed	Unknown	Unknown	Unknown
SW277	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
SW3	306100, 252760	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW315	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW4	305890, 252230	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SW5	302640, 251610	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW6	303240, 251560	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW7	306676, 245818	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
SW8	306330, 246270	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	312548, 233667	No	Medium	Not Meeting	Unknown	Unknown	Unknown
TBC	313355, 233720	No	Medium	Meeting	Unknown	Unknown	Unknown
TBC	313355, 233720	No	High	Not Meeting	Unknown	Unknown	Unknown
TBC	317236, 234315	No	High	Not Meeting	Unknown	Unknown	Unknown
TBC	318619, 235576	No	High	Not Meeting	Unknown	Unknown	Unknown
TBC	318619, 235576	No	High	Not Meeting	Unknown	Unknown	Unknown
TBC	310276, 234429	No	High	Meeting	Unknown	Unknown	Unknown
TBC	314332, 234279	No	High	Meeting	Unknown	Unknown	Unknown
TBC	316855, 234458	No	High	Meeting	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	317364, 235905	No	High	Meeting	Unknown	Unknown	Unknown
TBC	309007, 234984	No	High	Meeting	Unknown	Unknown	Unknown
TBC	317775, 234381	No	High	Meeting	Unknown	Unknown	Unknown
TBC	317553, 234404	No	High	Meeting	Unknown	Unknown	Unknown
TBC	312976, 234346	No	High	Meeting	Unknown	Unknown	Unknown
TBC	310802, 234027	No	High	Meeting	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	High	Meeting	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	High	Meeting	Unknown	Unknown	Unknown
TBC	309277, 228129	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	311471, 227363	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	311471, 227363	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	314155, 228977	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	315427, 229531	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	316989, 229389	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	313906, 228943	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	312242, 229797	No	Medium	Not yet Assessed	Unknown	Unknown	Monitored
TBC	318389, 229639	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	317878, 229577	No	Medium	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	312689, 234345	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	314332, 234279	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	310741, 232270	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	313403, 232803	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
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TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m^3)	Monitoring Status
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	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 list of the various reports required for this agglomeration and a brief summary of their recommendations.

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

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

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

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

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
					for early Q3 2021, subject to Ministerial consent. The third and fourth contracts are scheduled to commence in late 2021 and mid 2023 respectively and will bring the plant capacity to 2.4m PE in 2025. Ministerial consent for the funding of the phosphorus recovery facility works was granted in December 2020 and the contract will commence in Q1 2021, with completion scheduled for the end of 2022. Initial upgrades to sludge treatment facilities commenced in 2020 and are scheduled to be completed in Q2 2021. Further elements are anticipated to progress towards the end of 2021 and continue into 2024. An interim stage in the project is to bring the plant into capability to produce a complaint effluent, based on a load of 2.1m PE, scheduled for the end of 2023.	
Upgrade storm water storage tank at WWTP as necessary	C.1	22nd December 2015	Yes		There are no current plans to upgrade the storm water storage tanks at the Works. This will be	Drainage Area Plan Investigation Study to be completed.

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
					reassessed on completion of the drainage areas plans.	
City Centre Sewerage Scheme (CCSS)	C.3	None specified	Not applicable	In progress	Stage 3 complete. Stage 4 near completion end 2021.	
North Docklands Sewerage Scheme	C.3	None specified	Not applicable	Completed	Completed	

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

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

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

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

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

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

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

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

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

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

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
WWTP Upgrade	WWTP Upgrade	WWTP (Condition 5.2)	End 2023 – scheduled completion of interim works to enable the production of a compliant effluent for 2.1m PE. End 2025 – scheduled completion of final works to upgrade WWTP to a capacity of 2.4m pe, As outlined above, it is important to note that this programmed 2023 date is the anticipated date that the plant can start producing an effluent in line with the parameters set out in the UWWTD and the actual confirmed UWWTD compliance determination will be up to 12 months from that date (on attaching 12 months compliance with the UWWTD ELVs).	
Main Lift Pumping Station Catchment DAP -Rathmines & Pembroke -Crumlin/Drimnagh/Bluebell	Survey & Assessment of Wastewater Network		2025	
Sutton Pumping Station Catchment DAP -North Fringe -North Dublin Drainage Scheme (NDDS)	Survey & Assessment of Wastewater Network		2025	SWO Assessment Competed. Multi-disciplinary pump station surveys currently ongoing.
Main Lift Pumping Station Upgrade Works	Upgrade to MLPS (Civil & M&E Works		2021	

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
	including pumps and panel replacements)			
Wastewater Pumping Station Capital Maintenance Works Programme	Capital Maintenance Works to Multiple Wastewater Pumping Stations		2020 11 Sites upgrades completed in 2020 : Ailesbury, Ballymun, Beaumont, Bluebell, Clontarf, Finglas Bridge, Killbarrack, Pelletstown, Poplar Row, Shrewsbury & Vernon Avenue.	

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	Still in Survey and assessment stage
Dodder Valley Sewers DAP	Survey & Assessment of Wastewater Network		2023	Asset Surveys complete Assessment stage 3 due for completion 2023
Newcastle Local Network Reinforcement Project	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	On hold. Scope under review.	Separate alternative Project being progressed to service Newcastle area
Ballycullen/Oldcourt Network Reinforcement Project	Provision of additional capacity to control reduce flooding risk.	Network Upgrade	2023	

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		2024	Still in Survey and assessment stage
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	2023	
Liffey Siphons Refurbishment	Provision of additional capacity to reduce risk of flooding	Network Upgrade	2020	
Portmarnock Local Network Reinforcement Project	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	2025	Delay encountered due to An Bord Pleanala (ABP) planning refusal
Kinsealy Local Network Reinforcement Project	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	2022	

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	Project being reviewed / rescoped with Asset Planning. No defined timelines yet.	Project re-commenced being progressed under RC3.

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Dun Laoghaire Sewerage Scheme Phase 1	Contract 2 - Network Upgrade Sandyford/ Stillorgan Improvement-Tunnel - Removal of deficiencies in capacity	Storage and Network Upgrade	Project being reviewed / rescoped with Asset Planning. No defined timelines yet.	Separate alternative Project being progressed to service Sandyford area under RC3. Project being scoped. No timelines available to report.
Goatstown Local Network Reinforcement Project	Provision of additional capacity to reduce risk of flooding	Network Upgrade	2023	
Churchtown/Landscape Rd Network Reinforcement Project	Provision of additional capacity to reduce risk of flooding	Network Upgrade	2023	
West Pier Pumping Station Catchment DAP **-West Pier East** **-West Pier West**	Survey & Assessment of Wastewater Network	Not Applicable	2023	

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

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Seal the leaking cable ducts and other points that flood the wet well sumps	Seal the leaking cable ducts and other points that flood the wet well sumps; a) at Ashbourne PS b) at Kilbride PS	Not Applicable	2019	completed
A new PLC and radio signal system in Kilbride & Ratoath	A new radio signal system in the Ashbourne, Ratoath and Kilbride pumping stations are undergoing upgrade works which also includes upgrades to the PLC's at Kilbride and Ratoath PS's. This work when complete will provide a robust alarm system for the pumping stations and prevent unauthorised discharges from Kilbride PS.	Not Applicable	Q2 2019	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 Table.

5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

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

5.1 PRIORITY SUBSTANCES ASSESSMENT

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

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

5.2 TOXICITY/LEACHATE MANAGEMENT

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

Toxicity/Leachate Management	Annual leachate volume at Ringsend is not significant at cubic metres. This constitutes 562 cubic metres per day (0.12 % v/v) based on the 2020 mean daily influent volume of 458,641 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
Is there a need to advise the EPA for consideration of a Technical Amendment / Review of the licence?	Yes
List reason e.g. additional SWO identified	*Irish Water will be seeking a review of the license in relation to the proposed upgrade of treatment works and network.*
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	Yes
List reason e.g. changes to monitoring requirements	*Upgrade in capacity of waste water treatment works & changes to ambient monitoring requirements.*
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

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

Date: 29/07/2021

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

Katherine Walshe

Acting Head of Environmental Regulation.

7 APPENDIX

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

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

Appendix 7.1 - Ambient Monitoring Summary

Appendix 7.1.1 Dublin Ambient Sampling Points Map

Appendix 7.1.2 Transitional Monitoring Water Quality Data: ASW2 – ASW10

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

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

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

Appendix 7.1.1 Dublin Ambient Sampling Points Map

Appendix 7.1.2 Transitional Water Body Monitoring 2020 ASW 2 to ASW 10

Report for Samples Taken During the Period: 01/01/2020 - 31/12/2020

Customer	EPA Code	Test List	Sampling Point	Sampling Point Description	Sampled D	Sample Number	Ammonia µg/l as N	B.O.D. mg/l	Sal	Chlorophy mg/m3	DIN µg/l	Dissolved % Sat.	Pheophyti mg/m3	Phosphor µg/l SRP a	Salinity PSU	Silica µg/l as Si	Temperati °C	TON µg/l as N
				Surface Water Objectives for Transitional Water Bodies SI 272 of 2009														
				Compliant				< 4 mg/l (95%-ile)		High-Good 2.5 median		95%-ile 0% PSU		0%-17% PSU				
										Good-Moderate 5.0 median		70% - 130% 35% PSU 80% - 120%		<60 ug/l P (median) 35% PSU < 40 ug/l P (median)				
				Non-Compliant														
DCC	ASW 2S	123_ESTUAR	130842	(130842) Liffey Estuary Lower, 25m North of Poolbeg Wall - Surface Sample	06/05/202(	1704460	925	2		10.0	1043	97	2.7	97	34.68	188	12.8	118
					20/05/202(	1708714	612	3		3.2	716	98	0.8	127	29.31	177	13.4	80
					04/06/202(	1713345	1707	2		6.8	1990	97	2.8	114	30.05	587	14.8	283
					16/07/202(	1728436	1083	2		1.3	1998	96	3.5	564	35.29	1352	15.1	915
					27/08/202(	1744828	688	2		2.0	1489	96	1.4	355	28.59	2840	15.8	801
					17/09/202(	1752687	3829	3		2.7	4006	96	1.6	284	26.62	1183	16.9	177
										3				206				
DCC	ASW 2D	123_ESTUAR	130843	(130843) Liffey Estuary Lower, 25m North of Poolbeg Wall - Depth Sample	06/05/202(	1704461	917	2		9.7	1026	94	3.6	106	36.16	181	12.2	109
					20/05/202(	1708715	1810	2		4.3	2663	95	1.0	991	35.19	1987	12.9	838
					04/06/202(	1713346	265	1		6.0	390	94	1.2	28	36.23	261	14.5	125
					16/07/202(	1728437	34	<1		2.0	138	94	5.4	57	36.40	203	14.9	104
					27/08/202(	1744829	47	<1		1.7	196	95	1.5	54	35.31	625	16.0	149
					17/09/202(	1752688	272	<1		2.7	335	94	1.8	45	34.57	260	16.3	63
										3.5				56				
DCC	ASW 3S	123_ESTUAR	130844	(130844) Liffey Estuary Lower, 50m North of Poolbeg Wall - Surface Sample	06/05/202(	1704462	641	2		4.8	736	97	7.1	63	34.83	200	12.7	95
					20/05/202(	1708716	509	4		3.1	618	97	0.9	90	27.23	138	12.9	109
					04/06/202(	1713347	1786	2		7.9	2196	97	1.9	240	35.23	816	14.0	410
					16/07/202(	1728438	955	3		2.1	1928	97	4.8	607	35.52	1386	15.1	973
					27/08/202(	1744830	337	3		1.2	896	97	1.1	180	27.99	1973	15.9	559
					17/09/202(	1752689	969	2			1605	97		111	28.30	1164	16.8	636
										3.1				146				
DCC	ASW 3D	123_ESTUAR	130845	(130845) Liffey Estuary Lower, 50m North of Poolbeg Wall - Depth Sample	06/05/202(	1704463	725	2		8.3	822	94	1.3	74	36.32	223	12.0	97
					20/05/202(	1708717	933	2			1180	94		186	35.99	339	12.7	209
					04/06/202(	1713348	186	1		6.3	281	94	1.7	27	35.97	211	13.4	95
					16/07/202(	1728439	113	1		1.5	221	93	6.4	69	36.47	206	14.8	108
					27/08/202(	1744831	58	<1		1.5	192	93	1.4	49	35.67	590	16.0	134
					17/09/202(	1752690	118	<1		3.2	178	92	1.5	44	34.46	292	16.4	60
										3.2				59				
DCC	ASW 4S	123_ESTUAR	130846	(130846) Liffey Estuary Lower, 75m North of Poolbeg Wall - Surface Sample	06/05/202(	1704464	1470	2		4.7	1690	98	4.5	172	32.68	462	13.1	220
					20/05/202(	1708718	126	2		4.9	185	98	1.3	35	32.49	<50	13.2	59
					04/06/202(	1713349	356	2		7.5	583	98	1.6	40	35.57	787	13.6	227
					16/07/202(	1728440	771	2		1.2	1455	98	5.3	415	35.53	948	15.1	684
					27/08/202(	1744832	178	<1		1.1	664	98	3.0	93	28.12	1744	15.9	486
					17/09/202(	1752691	352	<1		1.9	515	97	1.9	55	28.23	549	16.6	163
										3.3				74				

DCC	ASW 4D	123_ESTUAR	130847	(130847) Liffey Estuary Lower, 75m North of Poolbeg Wall - Depth Sample	06/05/202(	1704465	897	2	3.9	1028	93	5.4	67	36.23	154	12.0	131
					20/05/202(	1708719	117	2	4.7	174	93	1.2	36	35.23	<50	12.8	57
					04/06/202(	1713350	202	1	6.5	314	93	1.4	24	36.10	276	13.2	112
					16/07/202(	1728441	640	2	1.1	1193	93	5.7	347	36.51	837	14.8	553
					27/08/202(	1744833	69	<1	1.1	230	93	2.8	57	35.66	697	16.0	161
					17/09/202(	1752692	106	<1		165	92		31	34.27	255	16.4	59
									3.9				47				
DCC	ASW 5S	123_ESTUAR	130848	(130848) Liffey Estuary Lower, 100m North of Poolbeg Wall - Surface Sample	06/05/202(	1704466	604	2	3.9	654	100	5.0	99	32.70	230	13.0	50
					20/05/202(	1708720	215	1	4.4	456	100	0.7	51	35.23	170	12.9	241
					04/06/202(	1713351	179	1	6.3	266	100	1.8	26	35.69	137	13.7	87
					16/07/202(	1728442	<10	<1	1.1	57	99	1.5	32	35.57	150	15.1	57
					27/08/202(	1744834	150	<1	2.4	627	99	1.4	82	29.68	1707	15.9	477
					17/09/202(	1752693	2900	3	1.2	3105	98	0.9	112	28.17	790	16.5	205
									3.2				67				
DCC	ASW 5D	123_ESTUAR	130849	(130849) Liffey Estuary Lower, 100m North of Poolbeg Wall - Depth Sample	06/05/202(	1704467	567	2	4.8	626	97	3.0	63	35.74	150	12.2	59
					20/05/202(	1708721	54	1	3.6	1926	98	0.9	30	36.07	736	12.7	1872
					04/06/202(	1713352	36	1	6.3	83	96	1.5	12	36.09	84	13.4	47
					16/07/202(	1728443	11	<1	1.9	11	97	4.1	31	36.39	152	14.9	<40
					27/08/202(	1744835	107	<1	0.9	355	96	2.8	67	35.21	955	16.0	248
					17/09/202(	1752694	114	<1	2.3	161	96	1.3	29	33.68	212	16.2	47
									3				31				
DCC	ASW 6S	123_ESTUAR	40063	(40063) Liffey City D/S Islandbdg Weir	06/05/202(	1704364	34	<1	2.3	2915	98	2.0	5	0.1	507	13.3	2881
					20/05/202(	1708697	88	2	3.6	896	98	2.8	34	0.1	1994	14.0	808
					04/06/202(	1713304	10	3	19.8	3491	81	5.3	139	0.1	1800	14.9	3481
					16/07/202(	1728450	<10	1	1.5	3095	94	1.4	21	0.0	5351	17.0	3095
					27/08/202(	1744758	<10	3	7.5	2707	106	5.1	79	0.0	7610	15.6	2707
					17/09/202(	1752726	16	2	3.1	2503	91	3.1	16	0.1	5663	17.1	2487
									3.4				28				
DCC	ASW 7S	123_ESTUAR	40067	(40067) Liffey City Heuston Stn u/s Camac	06/05/202(	1704365	98	2	11.0	2570	93	10.3	18	1.8	791	13.4	2472
					20/05/202(	1708698	88	<1	1.4	884	89	6.9	33	2.5	1996	14.8	796
					04/06/202(	1713305	27	7	47.0	1059	78	21.0	109	4.6	491	12.2	1032
					16/07/202(	1728451	12	<1	1.7	2729	92	1.2	23	1.0	5198	16.9	2717
					27/08/202(	1744759	<10	2	3.0	2795	107	4.8	74	0.0	7486	15.6	2795
					17/09/202(	1752727	38	<1	1.6	1811	87	1.9	25	2.1	5955	16.9	1773
									2.4				29				

DCC	ASW 8S	123_ESTUAR	40072	(40072) Liffey City Winetav St Bridge	06/05/202(	1704366	161	7	18.2	1686	110	8.9	33	13.1	441	13.2	1525
					20/05/202(	1708699	93	1	4.1	935	96	3.0	34	16.3	1991	14.8	842
					04/06/202(	1713306	31	2	9.5	937	83	4.6	76	29.4	286	14.2	906
					16/07/202(	1728452	13	<1	1.5	2186	91	1.6	28	7.1	4639	16.6	2173
					27/08/202(	1744760	<10	1	3.1	2393	106	5.1	19	4.1	6717	15.8	2393
					17/09/202(	1752728	73	<1	1.5	817	84	1.2	21	13.9	1428	17.1	744
									3.6				31				
DCC	ASW 9S	123_ESTUAR	40457	(40457) Liffey (S) D/S Toll Bridge	06/05/202(	1704367	291	1	11.5	1213	108	3.3	38	20.4	518	12.9	922
					20/05/202(	1708700	172	1	1.9	396	97	1.5	46	15.6	176	14.9	224
					04/06/202(	1713307	42	2	9.7	1490	90	2.4	120	30.3	4689	14.5	1448
					16/07/202(	1728453	34	1	1.3	876	98	1.3	22	12.0	5119	16.8	842
					27/08/202(	1744761	<10	1	1.5	1543	108	2.3	52	4.4	5964	15.0	1543
					17/09/202(	1752729	77	<1	1.2	932	88	1.1	28	13.8	2031	17.4	855
									1.7				42				
DCC	ASW 10S	123_ESTUAR	45082	(45082) Tolka River D/S Annesley Bridge	06/05/202(	1704368	263	1	3.7	1595	82	5.9	39	3.5	1314	12.7	1332
					20/05/202(	1708701	88	1	2.5	1422	89	10.3	37	2.7	749	15.9	1334
					04/06/202(	1713308	39	1	4.8	2960	75	5.6	191	12.8	6313	12.6	2921
					16/07/202(	1728454	38	1	12.8	1615	121	11.7	49	4.6	3793	16.9	1577
					27/08/202(	1744762	<10	2	4.2	2098	110	6.8	116	0.1	7732	15.1	2098
					17/09/202(	1752730	117	1	6.8	901	89	3.7	21	1.5	5924	16.8	784
									4.5				44				

Appendix 7.1.3 Transitional Water Body Monitoring 2020 - EPA DB-020 to DB-420

Report for Samples Taken During the Period: 01/01/2020 - 31/12/2020

Customer	EPA Code	Test List	Sampling Point	Sampling Point Description	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Bottom Oxygen % Sat.	Bottom Temperature °C	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	Oxygen at 0 m depth % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Salinity (mean) PSU	Silica µg/l as SiO2	Surface Temperature °C	Temperature °C	TON µg/l as N
				Surface Water Objectives for Transitional Water Bodies SI 272 of 2009																		
				Compliant				< 4 mg/l (95%-ile)			High-Good 2.5 median Good-Moderate 5.0 median		95%-ile 0% PSU 70% - 130% 35% PSU 80% - 120%			0%-17% PSU <60 ug/l P (median) 35% PSU < 40 ug/l P (median)						
				Non-Compliant																		
DCC	DB 020	123_ESTUAR	130870	(130870) Liffey Estuary Upper, Liffey at Matt Talbot Bridge -	06/05/2020 08:32	1704468	80	<1			1.6	1494	98		5.5	5	10.53		577		12.4	1414
					20/05/2020 07:45	1708722	197	<1			3.2	444	98		2.2	62	23.96		157		13.3	247
					04/06/2020 07:52	1713353	108	2			9.2	668	98		2.8	39	27.60		274		15.5	560
					16/07/2020 10:00	1728444	21	<1			1.5	1452	98		2.5	34	32.37		2792		15.1	1431
					27/08/2020 10:00	1744836	26	1			1.6	2003	99		3.2	88	3.72		1736		15.3	1977
					17/09/2020 10:00	1752695	59	<1			0.5	1252	99		1.1	35	7.01		3519		16.3	1193
											1.6					37						
DCC	DB 020	123_ESTUAR	130871	(130871) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Depth	06/05/2020 08:39	1704469	378	3			25.8	541	97		63.4	70	34.20		349		12.2	163
					20/05/2020 07:49	1708723	200	2			11.8	443	96		3.3	65	34.17		156		13.1	243
					04/06/2020 07:55	1713354	175	2			8.9	276	97		2.5	48	35.34		188		15.3	101
					16/07/2020 10:00	1728445	14	1			7.2	98	97		6.2	40	35.38		187		14.9	84
					27/08/2020 10:00	1744837	186	<1			0.9	611	97		5.0	75	33.49		1527		16.0	425
					17/09/2020 10:00	1752696	164	1			1.2	317	96		1.7	34	32.39		493		15.9	153
											8.1					57						
DCC	DB 120	123_ESTUAR	130800	(130800) Liffey Estuary Lower, Dodder Grand Canal Basin- Surface	06/05/2020 08:59	1704451	97	<1			2.5	1376	98		4.1	12	15.40		1478		12.8	1279
					20/05/2020 08:10	1708705	235	<1			1.1	774	98		2.6	54	24.05		517		13.3	539
					04/06/2020 08:17	1713336	170	2			4.7	719	98		2.2	37	30.16		464		15.5	549
					16/07/2020 10:00	1728427	<10	<1			0.8	923	98		1.3	15	30.91		6815		15.0	923
					27/08/2020 10:00	1744819	24	1			1.1	829	98		1.8	37	0.69		5525		15.6	805
					17/09/2020 10:00	1752678	75	<1			3.7	592	100		2.7	22	3.11		4275		15.7	517
											1.8					30						
DCC	DB 120	123_ESTUAR	130801	(130801) Liffey Estuary Lower, Dodder Grand Canal Basin- Depth	06/05/2020 09:06	1704452	379	3			7.5	756	95		21.7	47	33.01		388		12.6	377
					20/05/2020 08:14	1708706	88	2			5.8	1544	96		4.0	35	34.34		729		12.9	1456
					04/06/2020 08:19	1713337	183	2			11.2	309	96		1.6	28	34.66		222		15.3	126
					16/07/2020 10:00	1728428	22	<1			6.1	111	96		1.7	37	35.41		206		14.9	89
					27/08/2020 10:00	1744820	100	<1			1.3	361	96		1.6	53	34.34		1565		16.0	261
					17/09/2020 10:00	1752679	130	1				541	97			36	31.04		1031		16.3	411
											6.1					37						
DCC	DB 210	123_ESTUAR	130810	(130810) Liffey Estuary Lower, East Link Toll Bridge - Surface Sample	06/05/2020 09:15	1704453	236	1			9.2	1269	98		9.7	32	19.90		694		12.8	1033
					20/05/2020 08:29	1708707	211	<1			2.7	431	98		1.8	56	23.12		140		13.4	220
					04/06/2020 08:29	1713338	175	1			7.6	592	98		2.0	32	30.08		396		15.2	417
					16/07/2020 10:00	1728429	<10	<1			2.9	40	98		5.0	20	32.69		259		15.0	40
					27/08/2020 10:00	1744821	28	1			1.5	1714	98		2.7	71	3.96		5955		15.7	1686
					17/09/2020 10:00	1752680	73	<1			2.5	377	99		2.8	12	12.92		1862		16.3	304
											2.8					32						
DCC	DB 210	123_ESTUAR	130811	(130811) Liffey Estuary Lower, East	06/05/2020 09:19	1704454	391	2			14.0	664	97		10.1	66	34.20		255		12.4	273
					20/05/2020 08:33	1708708	176	1			5.6	411	97		6.1	44	34.59		135		12.9	235
					04/06/2020 08:33	1713339	144	1			8.1	285	97		1.6	32	35.72		173		14.7	141
					16/07/2020 10:00	1728430	<10	<1			3.7	< 50	97		6.3	26	35.99		196		14.8	<40
					27/08/2020 10:00	1744822	76	<1			1.1	402	97		1.2	52	33.57		1303		16.0	326
					17/09/2020 10:00	1752681	98	<1			2.0	208	98		1.5	28	33.17		379		16.2	110
											4.7					38						
DCC	DB 220	123_ESTUAR	130820	(130820) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) -	06/05/2020 09:32	1704455	403	2			10.1	694	98		18.7	53	32.33		263		13.1	291
					20/05/2020 08:41	1708709	155	1			4.3	247	98		1.0	38	32.52		57		13.1	92
					04/06/2020 08:49	1713340	166	1			6.3	362	98		1.6	23	32.33		229		14.7	196
					16/07/2020 10:00	1728431	<10	<1			4.1	44	97		1.7	22	34.60		253		15.1	44
					27/08/2020 10:00	1744823	84	<1			1.5	1564	97		1.9	78	23.35		4935		15.9	1480
					17/09/2020 10:00	1752682	127	<1			2.5	209	99		1.2	25	32.24		253		17.0	92
											4.2					32						

DCC	DB 220	123_ESTUAR	130821	(130821) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) -	06/05/2020	09:37	1704456	216	1			6.8	298	97		6.4	36	35.08		99		12.4	82
					20/05/2020	08:45	1708710	905	2			5.7	1178	96		0.9	196	34.59		296		12.9	186
					04/06/2020	08:52	1713341	130	1			6.5	221	96		2.0	16	35.71		109		14.5	91
					16/07/2020	10:00	1728432	11	<1			2.8	11	96		3.9	27	36.22		142		14.9	<40
					27/08/2020	10:00	1744824	48	<1			2.0	185	96		1.1	43	34.53		580		15.9	137
					17/09/2020	10:00	1752683	122	1				178	96			54	33.87		299		16.5	56
												5.7					40						
DCC	DB 410	123_ESTUAR	130830	(130830) Liffey Estuary Lower,	06/05/2020	11:35	1704457	15	2			7.5	15	96		1.1	5	34.73		<50		12.8	<40
					20/05/2020	10:59	1708711	139	2			4.3	179	96		0.1	37	33.92		<50		13.4	40
					04/06/2020	10:25	1713342	981	2			9.6	1136	96		5.3	64	32.47		334		15.9	155
					16/07/2020	10:00	1728433	991	2			3.2	1857	96		1.6	498	35.45		1334		15.1	866
					27/08/2020	10:00	1744825	557	1			1.9	1223	95		1.1	281	26.55		2379		16.0	666
					17/09/2020	10:00	1752684	486	<1				698	97			73	31.91		728		16.7	212
												4.3					69						
DCC	DB 410	123_ESTUAR	130831	(130831) Liffey Estuary Lower,	06/05/2020	11:38	1704458	32	2			6.1	1566	92		5.3	22	36.08		567		12.1	1534
					20/05/2020	11:04	1708712	14	1			2.9	14	93		2.0	20	35.87		<50		12.8	<40
					04/06/2020	10:29	1713343	158	1			6.8	233	93		1.7	20	36.09		122		15.1	75
					16/07/2020	10:00	1728434	985	1			2.8	1885	93		2.8	523	36.51		1256		14.7	900
					27/08/2020	10:00	1744826	65	<1			2.1	209	92		1.2	54	34.59		639		15.9	144
					17/09/2020	10:00	1752685	62	<1				62	94			13	34.56		122		16.1	<40
												2.9					21						
DCC	DB 420	123_ESTUAR	130839	(130839) Liffey Estuary Lower, Poolbeg Lighthouse - Composite Sample	06/05/2020	11:50	1704459	52	1	100.2	11.7	4.3	93		101.3	0.1	21		36.39	<50	12.1		41
					20/05/2020	11:26	1708713	1621	1	99.1	12.8	2.8	2052		101.4	2.5	496		36.35	786	13.5		322
					04/06/2020	11:12	1713344	168	1	100.9	13.4	3.3	270		101.1	0.6	24		36.44	134	13.5		102
					16/07/2020	10:00	1728435	10	<1	100.1	14.2	5.6	10		100.7	0.5	32		36.48	77	14.6		<40
					27/08/2020	10:00	1744827	194	<1	100.4	15.9	1.5	354		101.5	0.7	65		35.51	727	16.0		160
					17/09/2020	10:00	1752686	20	<1	101.2	15.8		20		101.7		13		34.76	153	16.1		<40
												3.3					28						
DCC	DB 300	123_ESTUAR	45076	(45076) Tolka River U/S	06/05/2020	11:30	1704369	103	2			16.8	1559	126		11.8	30	0.1		1174		13.1	1456
					20/05/2020	10:25	1708702	88	<1			13.4	906	121		15.0	32	0.1		596		14.8	818
					04/06/2020	10:40	1713309	43	4			50.3	626	86		39.8	89	0.1		502		13.1	583
					16/07/2020	12:20	1728455	40	1			6.5	1590	129		4.0	49	0.0		5063		16.8	1550
					27/08/2020	12:00	1744763	<10	2			2.1	2559	111		3.3	82	0.1		9806		15.0	2559
					17/09/2020	12:45	1752731	15	<1			3.5	1353	112		3.2	13	0.1		4474		16.8	1338
												10					41						
DCC	DB 320	123_ESTUAR	130900	(130900) Tolka Estuary at East Point Business Park Bridge -	06/05/2020	11:20	1704370	2333	>7			87.1	2733	130		83.9	327	26.5		469		13.2	400
					20/05/2020	11:30	1708703	209	4			2.8	410	97		2.1	58	25.8		193		16.8	201
					04/06/2020	10:20	1713310	<10	2			8.1	1585	75		2.6	109	37.5		4881		13.6	1585
					16/07/2020	11:10	1728456	22	2			8.9	1931	119		10.7	53	17.6		1885		18.5	1909
					27/08/2020	10:40	1744764	<10	6			4.3	2217	93		8.8	56	11.7		7750		15.7	2217
					17/09/2020	12:30	1752732	325	1			2.5	688	82		2.6	92	18.9		1341		17.6	363
												6.2					75						
DCC	DB 320	123_ESTUAR	130901	(130901) Tolka Estuary at East Point Business Park Bridge - Depth	06/05/2020	11:10	1704371	1481	>7			98.5	1963	122		23.1	204	27.4		508		13.3	482
					20/05/2020	11:20	1708704	89	2			3.6	892	87		7.1	31	13.1		814		17.0	803
					04/06/2020	10:30	1713311	22	1			3.3	1552	76		5.1	117	10.6		3340		12.6	1530
					16/07/2020	12:10	1728457	41	2			9.8	803	111		6.9	56	18.1		1888		17.6	762
					27/08/2020	10:50	1744765	<10	2			4.0	2469	108		6.2	106	1.2		9307		15.3	2469
					17/09/2020	12:40	1752733	188	1			5.5	394	85		2.9	80	16.9		976		17.9	206
												4.8					93						
DCC	DB 330	123_ESTUAR	130910	(130910) Tolka Estuary, Castle Ave. - Surface Sample	16/07/2020	10:00	1728446	<10	<1			3.6	134	100		2.0	38	33.91		410		15.2	134
												3.6											
DCC	DB 330	123_ESTUAR	130911	(130911) Tolka Estuary, Castle Ave. - Depth Sample	16/07/2020	10:00	1728447	<10	<1			3.6	118	99		1.8	30	34.88		255		15.1	118
												3.6											
DCC	DB 330	123A_ESTUA	130912	(130912) Tolka Estuary, Castle Ave.	06/05/2020	09:53	1704470	865	2	99.8	12.7	17.6	1023		99.9	4.3	137		32.36	374	12.8		158
					20/05/2020	09:15	1708724	708	2	99.3	13.1		930		99.7		146		33.10	285	13.2		198
					04/06/2020	09:15	1713355	97	1	100.3	13.6	8.1	172		100.4	2.3	21		35.65	72	13.6		75
					27/08/2020	10:00	1744838	102	<1	99.8	16.0	1.6	321		99.9	1.4	55		34.03	771	16.0		219
					17/09/2020	10:00	1752697	283	<1	100.6	16.4	2.8	384		100.8	1.5	69		33.40	355	16.5		101

												5.5						69							
DCC	DB 340	123A_ESTUA	130922	(130922) Tolka Estuary, Clontarf	06/05/2020	09:59	1704471	412	2	100.6	12.4	5.6	579		100.7	2.6	82		34.58	205	12.7		167
					20/05/2020	09:39	1708725	422	1	100.0	13.2	4.4	581		100.1	1.0	84		35.22	391	13.2		159
					04/06/2020	09:34	1713356	69	1	100.3	13.6	7.3	153		100.4	1.5	17		35.92	496	13.7		84
					16/07/2020	10:00	1728448	<10	<1	100.2	14.9	2.5	< 50		100.4	2.8	25		35.76	161	15.0		<40
					27/08/2020	10:00	1744839	120	<1	100.4	16.0	1.2	357		100.6	2.5	65		34.99	986	16.0		237
					17/09/2020	10:00	1752698	181	<1	100.5	16.5	3.1	266		100.5	1.5	55		33.47	324	16.5		85
												3.8						60							
DCC	DB 350	123A_ESTUA	130932	(130932) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge -	06/05/2020	10:15	1704472	530	2	99.9	12.4	6.1	790		99.9	5.4	72		34.79	209	12.5		260
					20/05/2020	09:55	1708726	555	1	99.8	13.0	4.1	776		99.7	1.0	119		34.91	215	13.0		228
					04/06/2020	09:47	1713357	195	1	99.9	14.1	7.1	355		99.9	1.9	39		35.49	319	14.1		160
					16/07/2020	10:00	1728449	15	<1	100.0	15.0	3.6	15		100.0	2.6	30		34.88	230	15.0		<40
					27/08/2020	10:00	1744840	212	<1	99.3	16.0	1.1	526		99.3	2.7	88		31.09	1331	16.0		314
					17/09/2020	10:00	1752699	264	<1	100.1	16.5	3.7	351		100.1	1.6	66		33.59	366	16.5		87
												3.9						69							

Appendix 7.1.4 Dublin Bay Water Quality Monitoring Points 2020 Agreed by the EPA

Report for Samples Taken During the Period: 01/01/2020 - 31/12/2020

Customer	EPA Code	Test List	Sampling Point	Sampling Point Description	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Bottom Oxygen % Sat.	Bottom Temperature °C	Chlorophyll a mg/m3	DIN µg/l	Oxygen at 0 m depth % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity (mean) PSU	Silica µg/l as SiO2	Surface Temperature °C	TON µg/l as N
				Surface Water Objectives for Transitional Water Bodies SI 272 of 2009															
				Compliant					95%-ile 0% PSU 70% - 130% 35% PSU 80% - 120%		High-Good 2.5 median Good-Moderate 5.0 median	High Status <170 ug/l N Good Status 0% PSU < 2000 ug/l N 34.5% PSU < 250 ug/l N	95%-ile 0% PSU 70% - 130% 35% PSU 80% - 120%						
				Non-Compliant															
DCC	DB 010	123A_ESTUA	130602	(130602) Irish Sea Dublin, Balley - Composite Sample	07/05/2020 10:17	1704532	66	1	102.3	10.7	4.9	876	103.4	0.8	34	36.38	1952	11.4	788
					03/06/2020 07:45	1712960	67	<1	102.6	13.1	4.4	155	103.2	1.1	30	36.66	312	13.3	66
					15/07/2020 10:00	1727830	<10	<1	103.0	13.9	4.0	< 50	103.5	0.7	29	36.56	72	14.3	<40
					12/08/2020 10:00	1738101	<10	<1	102.7	15.5	2.7	< 50	103.6	1.1	22	34.41	50	16.2	<40
											4.2	876							
DCC	DB 030	123A_ESTUA	130702	(130702) Dublin Bay,1km NE Poolbeg Lighthouse - Composite Sample	07/05/2020 09:05	1704524	15	1	102.0	11.2	3.5	66	102.6	0.8	11	36.42	112	11.5	51
					03/06/2020 08:45	1712972	65	1	102.4	13.5	3.7	165	102.9	0.7	<10	36.67	296	13.6	60
					15/07/2020 10:00	1727822	13	<1	102.4	14.4	3.9	13	102.7	1.0	33	36.46	104	14.6	<40
					12/08/2020 10:00	1738093	26	<1	102.5	16.0	1.5	26	102.8	1.4	36	34.33	157	16.1	<40
											3.6								
DCC	DB 050	123A_ESTUA	130712	(130712) Dublin Bay, South Bull Bouy, 1km SE Poolbeg Lighthouse - Composite Sample	07/05/2020 08:39	1704525	<10	1	101.9	11.0	2.8	52	102.4	0.1	14	36.47	81	11.3	52
					03/06/2020 09:05	1712973	63	1	102.3	13.3	2.1	162	102.7	1.9	12	36.65	307	13.5	99
					15/07/2020 10:00	1727823	<10	<1	102.0	14.1	3.9	< 50	102.4	1.3	26	36.56	90	14.5	<40
					12/08/2020 10:00	1738094	249	<1	102.0	15.8	2.3	341	102.6	4.0	95	34.36	310	16.2	92
											2.6	341							
DCC	DB 510*	123A_ESTUA	130722	(130722) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Composite Sample	07/05/2020 09:25	1704527	<10	1	101.8	11.0	2.4	64	102.7	3.6	12	36.43	74	11.4	64
					03/06/2020 09:31	1712975	61	1	102.0	15.0	3.3	141	102.6	0.4	14	36.62	305	15.6	60
					15/07/2020 10:00	1727825	23	<1	101.8	14.2	4.7	23	102.2	1.0	20	36.46	86	14.5	<40
					12/08/2020 10:00	1738096	26	<1	101.8	15.7	4.0	26	102.3	<0.1	33	34.36	94	16.1	<40
											3.7								
DCC	DB 540*	123A_ESTUA	130732	(130732) Dublin Bay, 2.5km SSE Poolbeg Lighthouse - Composite Sample	07/05/2020 08:27	1704526	<10	1	101.3	11.0	5.2	62	102.4	1.1	<10	36.44	80	11.4	62
					03/06/2020 09:49	1712976	70	1	102.0	13.0	2.1	132	102.7	0.5	10	36.65	335	13.4	62
					15/07/2020 10:00	1727826	<10	<1	101.8	14.1	2.6	< 50	102.3	0.7	32	36.55	100	14.4	<40
					12/08/2020 10:00	1738097	16	<1	101.7	15.7	2.0	76	102.4	1.9	30	34.31	115	16.1	60
											2.5								
DCC	DB 550	123A_ESTUA	130742	(130742) Dublin Bay, No. 4 Bouy, 2.5km E of S Poolbeg Lighthouse - Composite Sample	07/05/2020 08:10	1704528	10	1	101.7	11.0	2.6	71	102.4	0.3	<10	36.40	80	11.3	61
					03/06/2020 08:25	1712974	79	1	102.1	13.1	1.3	145	102.9	2.5	13	36.70	281	13.5	66
					15/07/2020 10:00	1727824	<10	<1	102.0	14.2	2.8	< 50	102.5	0.5	37	36.56	86	14.4	<40
					12/08/2020 10:00	1738095	405	<1	102.0	15.6		546	102.5		156	34.29	441	16.2	141
											2.8	546							
DCC	DB 560	123A_ESTUA	130752	(130752) Dublin Bay, Drumleck Point, 5km ENE Poolbeg Lighthouse - Composite Sample	07/05/2020 09:39	1704530	17	2	102.3	11.2	<0.1	92	102.9	13.4	<10	36.32	132	11.5	75
					03/06/2020 08:09	1712978	75	1	102.3	13.1	4.1	142	103.0	1.0	<10	36.67	263	13.5	67
					15/07/2020 10:00	1727828	19	<1	102.4	14.2	2.9	19	102.8	3.2	37	36.51	104	14.4	<40
					12/08/2020 10:00	1738099	31	<1	102.5	15.8		31	102.9		26	34.36	69	16.2	<40
											2.9								
DCC	DB 570*	123A_ESTUA	130762	(130762) Dublin Bay, 5km ESE Poolbeg Lighthouse - Composite Sample	07/05/2020 10:35	1704531	12	1	100.8	10.8	3.6	62	101.9	0.2	14	36.43	<50	11.6	50
					03/06/2020 07:10	1712979	96	1	102.0	13.1	1.1	253	102.6	6.6	<10	36.62	705	13.3	157
					15/07/2020 10:00	1727829	<10	<1	101.1	14.3	2.9	< 50	101.8	0.4	32	36.55	82	14.6	<40
					12/08/2020 10:00	1738100	<10	<1	101.5	15.7	1.7	< 50	102.1	2.4	27	34.38	68	16.2	<40
											2.3	253							
DCC	DB 570*	123A_ESTUA	130772	(130772) Dublin Bay, Dún Laoghaire, 5km E of S Poolbeg Lighthouse - Composite Sample	07/05/2020 07:53	1704529	19	1	101.3	10.7	3.7	80	101.9	2.9	<10	36.44	130	11.3	61
					03/06/2020 10:13	1712977	65	1	101.3	13.0	2.7	110	102.2	1.0	10	36.70	168	13.4	45
					15/07/2020 10:00	1727827	<10	<1	101.1	14.2	1.7	75	102.1	2.3	29	36.56	76	14.4	75
					12/08/2020 10:00	1738098	14	<1	101.5	15.7	1.5	14	102.2	0.9	45	34.36	176	16.2	<40
											2.2								

Appendix 7.1.5 Bathing Water Monitoring 2020

Report for Samples Taken During the Period: 01/01/2020 - 31/12/2020

Compliant with SUFFICIENT QUALITY
Non-Compliant with SUFFICIENT
POOLBEG DISCHARGE PLUME

Customer	EPA Code	Test List	Sampling I	Sampling Point Description	Sampled Date Time	Sample Number	E. coli MPN/100ml	Enterococci CFU/100ml	Enterococci (Confirmed) CFU/100ml	Floating Materials	Mineral Oil (visual)	pH pH	Phenols_Olfactory	Salinity PSU	Surfactants	Visual Inspection
DCC	ASW 11	121_BEACH	40520	(40520) Dollymount North	02/06/2020 11:00	1712414	10		27	Ectocarpus Present	Absent	8.3	Absent	33.6	Absent	Ectocarpus present
					08/06/2020 13:00	1714724	10	<1		Absent	Absent	8.5	Absent	33.8	Absent	Normal
					15/06/2020 08:00	1716989	<10		2	Absent	Absent	8.2	Absent	32.7	Absent	Normal
					22/06/2020 12:30	1719434	30		13	Ectocarpus Present	Absent	8.3	Absent	33	Absent	Ectocarpus present
					28/06/2020 17:00	1721476	<10		25	Ectocarpus Present	Absent	8.3	Absent	32.1	Absent	Ectocarpus present
					01/07/2020 08:25	1722668	10		3	Ectocarpus Present	Absent	8.1	Absent	33	Absent	Ectocarpus present
					03/07/2020 10:00	1723702	52		44	Ectocarpus Present	Absent	8.2	Absent	33	Absent	Ectocarpus present
					06/07/2020 13:00	1724328	10		8	Absent	Absent	8.3	Absent	28.3	Absent	Normal
					10/07/2020 14:30	1726114	<10		1	Absent	Absent	8.7	Absent	33.2	Absent	Normal
					15/07/2020 07:25	1727532	31		6	Ectocarpus Present	Absent	8.1	Absent	32.5	Absent	Ectocarpus present
					20/07/2020 12:45	1729401	<10		3	Ectocarpus Present	Absent	8.1	Absent	33.3	Absent	Ectocarpus present
					26/07/2020 16:00	1731715	<10		9	Absent	Absent	8.7	Absent	33.3	Absent	Normal
					29/07/2020 06:45	1732923	<10		6	Ectocarpus Present	Absent	8.2	Absent	33.2	Absent	Ectocarpus present
					04/08/2020 13:00	1734899	20		26	Ectocarpus Present	Absent	8	Absent	33.7	Absent	Ectocarpue present
					09/08/2020 15:10	1736589	132		25	Ectocarpus Present	Absent	8.6	Absent	33.5	Absent	Ectocarpus present
					10/08/2020 16:05	1737130	30		7	Ectocarpus Present	Absent	8.4	Absent	33.3	Absent	Ectocarpus present
					17/08/2020 11:20	1739891	250		370	Absent	Absent	8	Absent	32.6	Absent	Normal
					24/08/2020 16:10	1743087	10		37	Ectocarpus Present	Absent	8.4	Absent	33.6	Absent	Ectocarpus present
					31/08/2020 10:00	1745757	85		15	Absent	Absent	8.1	Absent	31.8	Absent	Normal
					06/09/2020 14:05	1748272	31		16	Absent	Absent	7.9	Absent	32.9	Absent	Normal
					14/09/2020 09:50	1751078	10		16	Absent	Absent	8.3	Absent	33.7	Absent	Normal
						Number	21	1	20							
DCC	ASW 12*	121_BEACH	40526	(40526) Dollymount Bathing Zone	02/06/2020 11:15	1712415	<10	<1		Ectocarpus Present	Absent	8.3	Absent	32.9	Absent	Ectocarpus present
					08/06/2020 13:20	1714725	10	<1		Absent	Absent	8.6	Absent	33.7	Absent	Normal
					15/06/2020 08:20	1716990	<10	<1		Absent	Absent	8.2	Absent	32.8	Absent	Normal
					22/06/2020 12:45	1719435	20		11	Ectocarpus Present	Absent	8.3	Absent	32.8	Absent	Ectocarpus present
					28/06/2020 17:15	1721477	85		40	Ectocarpus Present	Absent	8.3	Absent	32.6	Absent	Ectocarpus present
					01/07/2020 08:40	1722669	218		7	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus present
					06/07/2020 13:25	1724329	<10		3	Absent	Absent	8.2	Absent	27.9	Absent	Normal
					15/07/2020 07:40	1727533	52		22	Ectocarpus Present	Absent	8.2	Absent	32.7	Absent	Ectocarpus present
					20/07/2020 13:00	1729402	10		2	Ectocarpus Present	Absent	8.4	Absent	33.9	Absent	Ectocarpus present
					26/07/2020 16:15	1731716	<10		3	Absent	Absent	8.5	Absent	32.7	Absent	Normal
					29/07/2020 07:00	1732924	63		25	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus present
					04/08/2020 13:10	1734900	52		15	Ectocarpus Present	Absent	8.1	Absent	33.3	Absent	Ectocarpue present
					09/08/2020 15:30	1736590	63		12	Ectocarpus Present	Absent	8.6	Absent	33.6	Absent	Ectocarpus present
					10/08/2020 16:15	1737131	20		14	Ectocarpus Present	Absent	8.4	Absent	33.2	Absent	Ectocarpus present
					17/08/2020 11:30	1739892	144		120	Absent	Absent	8	Absent	32.9	Absent	Normal
					24/08/2020 16:25	1743088	63		20	Ectocarpus Present	Absent	8.4	Absent	33.7	Absent	Ectocarpus present
					31/08/2020 10:15	1745758	285		22	Absent	Absent	8.1	Absent	31.6	Absent	Normal
					06/09/2020 14:20	1748273	<10		1	Ectocarpus Present	Absent	8.1	Absent	31.8	Absent	Ectocarpus present
					14/09/2020 10:00	1751079	63		20	Absent	Absent	8.2	Absent	33.5	Absent	Normal
						Number	19	3	16							
DCC	ASW 13	121_BEACH	40530	(40530) Dollymount South	02/06/2020 11:55	1712416	10		4	Ectocarpus Present	Absent	8.2	Absent	33.2	Absent	Ectocarpus present
					08/06/2020 13:30	1714726	10	<1		Absent	Absent	8.6	Absent	33.6	Absent	Normal
					15/06/2020 08:45	1716991	20		4	Absent	Absent	8.3	Absent	32.6	Absent	Normal
					22/06/2020 13:05	1719436	171		20	Ectocarpus Present	Absent	8.2	Absent	32.9	Absent	Ectocarpus present
					28/06/2020 17:30	1721478	<10		21	Ectocarpus Present	Absent	8.1	Absent	32.3	Absent	Ectocarpus present
					01/07/2020 09:10	1722670	146		44	Ectocarpus Present	Absent	8	Absent	32.8	Absent	Ectocarpus present

					03/07/2020 10:30	1723704	51		24	Ectocarpus Present	Absent	8.1	Absent	32.6	Absent	Ectocarpus present
					06/07/2020 14:00	1724330	20		9	Absent	Absent	8.2	Absent	27.6	Absent	Normal
					10/07/2020 14:20	1726116	<10		4	Ectocarpus Present	Absent	9.1	Absent	33.2	Absent	Ectocarpus present
					15/07/2020 07:55	1727534	<10		17	Absent	Absent	8.1	Absent	33.1	Absent	Normal
					20/07/2020 13:20	1729403	10		2	Absent	Absent	8.4	Absent	33.8	Absent	Normal
					26/07/2020 16:30	1731717	10		11	Ectocarpus Present	Absent	8.2	Absent	33.5	Absent	Ectocarpus present
					29/07/2020 07:20	1732925	31		3	Ectocarpus Present	Absent	8.1	Absent	33.3	Absent	Ectocarpus present
					04/08/2020 13:50	1734901	85		27	Absent	Absent	8.3	Absent	33.5	Absent	Normal
					09/08/2020 15:50	1736591	52		16	Ectocarpus Present	Absent	8.6	Absent	33.5	Absent	Ectocarpus present
					10/08/2020 16:40	1737132	86		13	Ectocarpus Present	Absent	8.7	Absent	33.5	Absent	Ectocarpus present
					17/08/2020 11:45	1739893	75		44	Absent	Absent	8	Absent	31.8	Absent	Normal
					24/08/2020 17:00	1743089	31		13	Ectocarpus Present	Absent	8.1	Absent	33.6	Absent	Ectocarpus present
					31/08/2020 10:35	1745759	435		16	Absent	Absent	8.1	Absent	32.5	Absent	Normal
					03/09/2020 13:20	1747625	85		18	Absent	Absent	8.1	Absent	33.1	Absent	Normal
					06/09/2020 14:45	1748274	31		9	Ectocarpus Present	Absent	8.3	Absent	32.6	Absent	Ectocarpus present
					14/09/2020 10:30	1751080	110		14	Absent	Absent	8.2	Absent	33.2	Absent	Normal
					Number		**22**	**1**	**21**							
DCC	**ASW 14**	**121_BEACH**	**40535**	**(40535) Bull Wall Wood Causeway**	02/06/2020 11:40	1712417	10		2	Absent	Absent	8.6	Absent	31.7	Absent	Normal
					08/06/2020 13:45	1714727	<10		2	Absent	Absent	8.2	Absent	32.1	Absent	Normal
					15/06/2020 09:10	1716992	134		30	Absent	Absent	8	Absent	25.1	Absent	Normal
					22/06/2020 13:30	1719437	20		12	Absent	Absent	8.1	Absent	31.5	Absent	Normal
					28/06/2020 17:50	1721479	63		19	Absent	Absent	8.2	Absent	31.3	Absent	Normal
					01/07/2020 09:30	1722671	728		350	Absent	Absent	8	Absent	32.1	Absent	Normal
					06/07/2020 14:20	1724331	75		15	Absent	Absent	8.2	Absent	26.4	Absent	Normal
					15/07/2020 08:10	1727535	52		11	Absent	Absent	8.1	Absent	31.2	Absent	Normal
					20/07/2020 13:40	1729404	<10		3	Absent	Absent	8.1	Absent	32.4	Absent	Normal
					26/07/2020 16:50	1731718	98		19	Absent	Absent	8.2	Absent	31.9	Absent	Normal
					29/07/2020 07:30	1732926	216		128	Absent	Absent	8.1	Absent	31.1	Absent	Normal
					04/08/2020 14:05	1734902	63		25	Absent	Absent	8.1	Absent	31.3	Absent	Normal
					09/08/2020 16:05	1736592	<10	<1		Absent	Absent	8.3	Absent	32.5	Absent	Normal
					10/08/2020 16:50	1737133	145		40	Absent	Absent	8.4	Absent	32.5	Absent	Normal
					17/08/2020 11:50	1739894	780		210	Absent	Absent	7.8	Absent	32.1	Absent	Normal
					24/08/2020 17:10	1743090	20		7	Absent	Absent	8.2	Absent	33.4	Absent	Normal
					31/08/2020 10:45	1745760	836		250	Absent	Absent	8	Absent	20.9	Absent	Normal
					06/09/2020 15:00	1748275	238		81	Absent	Absent	8	Absent	29.7	Absent	Normal
					14/09/2020 10:45	1751081	272		23	Absent	Absent	8	Absent	31.5	Absent	Normal
					Number		**19**	**1**	**18**							
DCC	**ASW 15**	**121_BEACH**	40538	**(40538) Poolbeg Outfall Main Discharge**	02/06/2020 10:00	1712418	512		2100	Absent	Absent	7.8	Absent	26.4	Absent	Normal
					08/06/2020 13:10	1714728	786		580	Absent	Absent	7.8	Absent	24.9	Absent	Normal
					15/06/2020 07:45	1716993	20		164	Absent	Absent	7.9	Absent	30.1	Absent	Normal
					22/06/2020 12:45	1719438	216		210	Absent	Absent	8	Absent	30.9	Absent	Normal
					28/06/2020 17:30	1721480	3540		10000	Absent	Absent	8	Absent	30	Absent	Normal
					01/07/2020 08:15	1722661	530		680	Absent	Absent	7.8	Absent	27.3	Absent	Normal
					06/07/2020 12:00	1724307	25994		>20000	Absent	Absent	7.6	Absent	24.5	Absent	Normal
					15/07/2020 07:30	1727542	2356		10600	Absent	Absent	7.8	Absent	26.6	Absent	Normal
					20/07/2020 12:25	1729410	402		>20000	Absent	Absent	7.8	Absent	27.4	Absent	Normal
					26/07/2020 15:55	1731719	2472		19700	Absent	Absent	7.9	Absent	27.8	Absent	Normal
					29/07/2020 06:45	1732927	992		>20000	Absent	Absent	7.8	Absent	26.7	Absent	Normal
					04/08/2020 12:00	1734903	104		136	Absent	Absent	8.1	Absent	28.3	Absent	Normal
					09/08/2020 16:35	1736593	3232		10900	Absent	Absent	7.7	Absent	22.4	Absent	Normal
					10/08/2020 15:50	1737134	664		800	Absent	Absent	7.9	Absent	27.4	Absent	Normal
					17/08/2020 10:20	1739696	19608		>20000	Ectocarpus Present	Absent	7.7	Absent	24.2	Absent	Ectocarpus present
					24/08/2020 15:05	1743091	<20		18	Absent	Absent	8.1	Absent	32.9	Absent	Normal
					31/08/2020 12:20	1745761	160		900	Absent	Absent	8	Absent	30.8	Absent	Normal
					06/09/2020 14:00	1748276	34658		100	Absent	Absent	7.3	Absent	19.8	Absent	Normal
					14/09/2020 10:00	1751082	2628		19700	Absent	Absent	7.5	Absent	18.1	Absent	Normal
					Number		**19**	**0**	**19**							
DCC	**ASW 16**	**121_BEACH**	40540	(40540) Half Moon Club S-Side Wall	02/06/2020 10:25	1712419	98		20	Absent	Absent	8.1	Absent	32.9	Absent	Normal
					08/06/2020 13:30	1714729	<10	<1		Absent	Absent	8.2	Absent	33.1	Absent	Normal
					15/06/2020 08:20	1716994	10		4	Absent	Absent	8	Absent	32.3	Absent	Normal
					22/06/2020 13:15	1719439	<10		6	Ectocarpus Present	Absent	8.2	Absent	33.3	Absent	Ectocarpus present
					28/06/2020 17:40	1721481	<10		10	Absent	Absent	8.2	Absent	33.4	Absent	Normal

					01/07/2020 08:30	1722662	<10		35	Absent	Absent	8.1	Absent	33.6	Absent	Normal
					06/07/2020 12:25	1724308	<10		1	Absent	Absent	8.1	Absent	33.5	Absent	Normal
					15/07/2020 08:00	1727543	41		21	Absent	Absent	8.1	Absent	32.7	Absent	Normal
					20/07/2020 12:45	1729411	20		7	Absent	Absent	8.1	Absent	33.8	Absent	Normal
					26/07/2020 16:15	1731720	<10		12	Absent	Absent	8.2	Absent	33.4	Absent	Normal
					29/07/2020 07:15	1732928	<10		4	Absent	Absent	8.1	Absent	33.6	Absent	Normal
					04/08/2020 12:20	1734904	109		72	Ectocarpus Present	Absent	8.1	Absent	33.5	Absent	Ectocarpue present
					09/08/2020 16:15	1736594	<10	<1		Absent	Absent	8.3	Absent	33.3	Absent	Normal
					10/08/2020 16:15	1737135	10		5	Absent	Absent	8.1	Absent	33.4	Absent	Normal
					17/08/2020 10:40	1739697	20		65	Absent	Absent	8.2	Absent	33.2	Absent	Normal
					24/08/2020 15:45	1743092	<10		2	Absent	Absent	8.1	Absent	34.1	Absent	Normal
					31/08/2020 12:40	1745762	62		10	Absent	Absent	8	Absent	32.6	Absent	Normal
					06/09/2020 14:40	1748277	52		430	Absent	Absent	8	Absent	33.2	Absent	Normal
					14/09/2020 10:30	1751083	52		8	Absent	Absent	8	Absent	32.5	Absent	Normal
						Number	**19**	**2**	**17**							
DCC	**ASW 17***	**121_BEACH**	**40545**	**(40545) Sandymount**	02/06/2020 09:45	1712420	<10		5	Absent	Absent	8.1	Absent	34.7	Absent	Normal
					08/06/2020 14:00	1714730	<10		1	Absent	Absent	8.2	Absent	33.8	Absent	Normal
					15/06/2020 08:35	1716995	10		4	Absent	Absent	8.1	Absent	33.1	Absent	Normal
					22/06/2020 12:20	1719440	20		12	Absent	Absent	8.2	Absent	32.9	Absent	Normal
					28/06/2020 18:20	1721482	<10		29	Ectocarpus Present	Absent	8.1	Absent	33.5	Absent	Ectocarpus present
					01/07/2020 09:10	1722663	74		18	Absent	Absent	8.1	Absent	33.7	Absent	Normal
					06/07/2020 12:55	1724309	31		5	Absent	Absent	8.1	Absent	33.8	Absent	Normal
					15/07/2020 08:20	1727544	156		47	Absent	Absent	7.9	Absent	30.5	Absent	Normal
					20/07/2020 13:25	1729405	<10		2	Absent	Absent	8.1	Absent	34.2	Absent	Normal
					26/07/2020 16:25	1731721	10		5	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus present
					29/07/2020 07:30	1732929	131		44	Ectocarpus Present	Absent	8.1	Absent	33.8	Absent	Ectocarpus present
					04/08/2020 12:50	1734905	121		26	Absent	Absent	8.1	Absent	33.5	Absent	Normal
					09/08/2020 16:55	1736595	10		8	Absent	Absent	8.2	Absent	34.5	Absent	Normal
					10/08/2020 16:35	1737136	98		70	Absent	Absent	8.1	Absent	33.6	Absent	Normal
					17/08/2020 11:05	1739698	**3255**		**890**	Absent	Absent	8	Absent	28.9	Absent	Normal
					24/08/2020 16:00	1743093	10		5	Ectocarpus Present	Absent	8.3	Absent	33.9	Absent	Ectocarpus present
					31/08/2020 11:15	1745763	169		43	Absent	Absent	8.1	Absent	32.5	Absent	Normal
					06/09/2020 15:00	1748278	<10		3	Ectocarpus Present	Absent	8.3	Absent	32.8	Absent	Ectocarpus present
					14/09/2020 11:30	1751084	118		30	Absent	Absent	8.2	Absent	33	Absent	Normal
						Number	**19**	**0**	**19**							
DCC	**ASW 18**	**121_BEACH**	**40550**	**(40550) Merrion Strand**	02/06/2020 09:25	1712421	<10		4	Absent	Absent	8.1	Absent	34.3	Absent	Normal
				ALL SEASON RESTRICTION 2020	08/06/2020 14:10	1714731	<10	<1		Absent	Absent	8.2	Absent	33.6	Absent	Normal
					15/06/2020 08:50	1716996	31		2	Absent	Absent	8.1	Absent	33	Absent	Normal
					22/06/2020 12:35	1719441	74		26	Absent	Absent	8.4	Absent	32.7	Absent	Normal
					28/06/2020 18:40	1721483	<10		3	Absent	Absent	8.2	Absent	33.5	Absent	Normal
					01/07/2020 09:30	1722664	63		10	Absent	Absent	8.1	Absent	33.8	Absent	Normal
					06/07/2020 13:15	1724310	336		88	Absent	Absent	8.1	Absent	34.3	Absent	Normal
					15/07/2020 08:30	1727545	121		63	Absent	Absent	8.2	Absent	33.1	Absent	Normal
					20/07/2020 13:35	1729406	135		60	Absent	Absent	8.1	Absent	34.9	Absent	Normal
					26/07/2020 16:45	1731722	545		41	Absent	Absent	8.3	Absent	34.9	Absent	Normal
					29/07/2020 07:50	1732930	146		76	Absent	Absent	8.1	Absent	34	Absent	Normal
					04/08/2020 13:10	1734906	226		34	Absent	Absent	8.1	Absent	33.6	Absent	Normal
					09/08/2020 17:10	1736596	41		29	Absent	Absent	8.2	Absent	34.2	Absent	Normal
					10/08/2020 16:50	1737137	313		**290**	Absent	Absent	8.1	Absent	33.7	Absent	Normal
					17/08/2020 11:20	1739699	**1112**		**330**	Absent	Absent	8.1	Absent	31.1	Absent	Normal
					24/08/2020 16:20	1743094	122		21	Ectocarpus Present	Absent	8.4	Absent	33.9	Absent	Ectocarpus present
					31/08/2020 11:25	1745764	318		39	Absent	Absent	8.2	Absent	31.5	Absent	Normal
					06/09/2020 15:20	1748279	63		34	Ectocarpus Present	Absent	8.4	Absent	33.4	Absent	Ectocarpus present
					14/09/2020 12:10	1751085	211		67	Absent	Absent	8.4	Absent	33.1	Absent	Normal
						Number	**19**	**1**	**18**							

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 2020

To comply with condition **4.11.1** of Licence D0034-01, 2 sub-samples of the Ringsend composite influent and effluent were analysed in 2020 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 1764792 taken on 21/10/20 .

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 :

Plasticisers : Di(2-ethylhexyl)phthalate (DEHP) was detected at 8.3 ug/l.

Pesticides : Glyphosate (1.01 ug/l), Mecoprop (0.08 ug/l), 2,4- D (0.10 ug/l), MCPA (0.12 ug/l), Diazinon (0.007 ug/l) and Terbutryn (0.031 ug/l) were detected in the effluent sample.

The only one of these 5 compounds detected in the Influent sample was Glyphosate. See below.

Metals : The metals Lead (8.0 ug/l), Arsenic (1.8 ug/l), Copper (25 ug/l), Zinc (269 ug/l), Antimony (1.7 ug/l), Tin (24.0 ug/l), Barium (20.9 ug/l), and Nickel (6.0 ug/l) were detected in the effluent sample.

These were all detected in the Influent sample except Tin. See below.

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 1764792 - 2020 Screening

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	< 1.00 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	Trichlorobenzenes	< 1.00 ug/l	(1,2,4)
8	Trichloromethane (Chloroform)	< 1.00 ug/l	
9	Xylenes (all isomers)	< 2.00 ug/l	
10	Ethyl Benzene	< 1.00 ug/l	
11	Toluene	< 1.00 ug/l	
12	Naphthalene	< 1.00 ug/l	**PAH's**
13	Fluoranthene	< 1.00 ug/l	
14	Benzo(k)fluoranthene	< 1.00 ug/l	
15	Benzo(ghi)perylene	< 1.00 ug/l	
16	Indeno(1,2,3-c,d)pyrene	< 1.00 ug/l	
17	Benzo(b)fluoranthene	< 1.00 ug/l	
18	Benzo(a)pyrene	< 1.00 ug/l	
	Acenaphthene	< 1.00 ug/l	
	Pyrene	< 1.00 ug/l	
	Anthracene	< 1.00 ug/l	
	Fluorene	< 1.00 ug/l	
	Phenanthrene	< 1.00 ug/l	
	Benz(a)anthracene	< 1.00 ug/l	
		< 13.00 ug/l	**Total PAH's**
19	Di(2-ethylhexyl)phthalate (DEHP)	**8.3 ug/l**	**Plasticisers**
	Diethyl Phthalate	< 1.0 ug/l	

No.	Compound	Result	Group of Compounds
20	Isodrin	< 6 ng/l	**Pesticides**
21	Dieldrin	< 5 ng/l	
22	Diuron	< 0.50 ug/l	
23	Isoproturon	< 0.50 ug/l	
24	Atrazine	< 0.02 ug/l	
25	Simazine	< 0.022 ug/l	
26	Glyphosate	**1.01 ug/l**	
27	Mecoprop	**0.08 ug/l**	
28	2,4-D	**0.10 ug/l**	
29	MCPA	**0.12 ug/l**	
30	Linuron	< 0.50 ug/l	
31	Dichlobenil	< 4 ng/l	
32	2,6-Dichlorobenzamide	N/A*	
	Diazinon	**0.007 ug/l**	
	Dimethoate	< 0.020 ug/l	
	Terbutryn	**0.031 ug/l**	
33	PCB's (Sum of 7)	< 0.033 ug/l	**PCB's**
34	Phenols	< 1.0 ug/l	**Phenols**
	m,p- Methylphenol	< 0.30 ug/l	**Cresols**
	o- Methylphenol	< 0.30 ug/l	
35	Lead (Total as Pb)	**8.0 ug/l**	**Metals**
36	Arsenic (Total as As))	**1.8 ug/l**	
37	Copper (Total as Cu)	**25 ug/l**	
38	Zinc (Total as Zn)	**269 ug/l**	
39	Cadmium (Total as Cd)	< 0.60 ug/l	
40	Mercury (Total as Hg)	< 0.02 ug/l	
41	Chromium (Total as Cr)	< 2 ug/l	
42	Selenium (Total as Se)	< 0.6 ug/l	
43	Antimony (Total as Sb)	**1.7 ug/l**	
44	Molybdenum (Total as Mo)	< 3 ug/l	

No.	Compound	Result	Group of Compounds
45	Tin (Total as Sn)	**24.0 ug/l**	
	Organo-Tin	< 0.02 ug/l	
46	Barium (Total as Ba)	**20.9 ug/l**	
47	Boron (Total as B)	< 0.23 mg/l	
48	Cobalt (Total as Co)	< 2.0 ug/l	
49	Vanadium (Total as V)	< 4.00 ug/l	
50	Nickel (Total as Ni)	**6.0 ug/l**	
51	Fluoride (as F)	0.53. mg/l	**General**
52	Chloride (as Cl)	-	
53	TOC (as C)	-	
54	Cyanide (Total as CN)	< 9 ug/l	
	Sulphate	148 mg/l	
	(Sample 1764731)		
55	Conductivity	2293 uS/cm (20 degrees C)	**Additional Tests**
56	Hardness (mg/l CaCO3)	N/A	
57	pH	7.8	

Assessment of the Significance of the Discharge SW1 on Receiving Water Quality – 2020

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

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

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

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

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

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

Specific Pollutant Parameter	AA-EQS (ug/l)	Effluent 1764792 (21/10/20)
		SW1
Arsenic	20	1.8
Chromium VI	0.6	< 2
Copper	5	25
Cyanide	10	< 9
Diazinon	0.01	0.007
Dimethoate	0.8	< 0.020
Fluoride	1,500	530
Glyphosate	-	1.01
Linuron	0.7	< 0.50
Mancozeb	2	-
Monochlorobenzene	25	< 1
Phenols	8	< 1.0
Toluene	10	< 1.0
Xylenes	10	< 2.0
Zinc	40	269

* = Total Chromium which is > Chromium VI

Ringsend Influent Screening 2020

To comply with condition **4.11.2 of Licence D0034-01**, a sample of the Ringsend influent was analysed during 2020 (on 21/10/20) – 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 21/10/20.

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:

2020– Influent Sample Reference 1764791 of 21/10/20.

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 : Tri-chloromethane (2.72 ug/l),

BTEX Compounds : Toluene (2.32 ug/l).

PAH's : All PAH's were reported at <20.0 ug/l.

Herbicides / Pesticides : Glyphosate (1.27 ug/l).

Phenols : Phenol (35.3 ug/l).

Cresols : m,p-Methylphenol was detected (70.3 ug/l).

Metals : The metals Lead (11 ug/l), Arsenic (2.4 ug/l), Copper (57 ug/l), Zinc (1080 ug/l), Chromium (6 ug/l),Selenium (0.6 ug/l), Antimony (2.6 ug/l), Molydenum (6 ug/l), Barium (30.5 ug/l), Boron (280 ug/l) and Nickel (31 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 1764791 – 2020 PRTR Screening

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	< 1.00 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	Trichlorobenzenes	< 1.00 ug/l	(1,2,4)
8	Trichloromethane	**2.72 ug/l**	
9	Xylenes (all isomers)	< 2.00 ug/l	
10	Ethyl Benzene	< 1.00 ug/l	
11	Toluene	**2.32 ug/l**	
12	Naphthalene	< 1.00	**PAH's**
13	Fluoranthene	<20.0 ug/l	
14	Benzo(k)fluoranthene	< 20.0 ug/l	
15	Benzo(ghi)perylene	< 20.0 ug/l	
16	Indeno(1,2,3-c,d)pyrene	< 20.0 ug/l	
17	Benzo(b)fluoranthene	< 20.0 ug/l	
18	Benzo(a)pyrene	< 20.0 ug/l	
	Acenaphthene	< 20.0 ug/l	
	Pyrene	< 20.0 ug/l	
	Anthracene	< 20.0 ug/l	
	Fluorene	< 20.0 ug/l	
	Phenanthrene	< 20.0 ug/l	
		< 221 ug/l	**Total PAH's***
19	Di(2-ethylhexyl)phthalate (DEHP)	< 100.0 ug/l	**Plasticisers**
	Diethyl Phthalate	< 20.0 ug/l	

No.	Compound	Result	Group of Compounds
20	Isodrin	< 26 ng/l	**Pesticides**
21	Dieldrin	< 22 ng/l	
22	Diuron	< 0.50 ug/l	
23	Isoproturon	< 0.50 ug/l	
24	Atrazine	< 0.087 ug/l	
25	Simazine	< 0.108 ug/l	
26	Glyphosate	**1.27 ug/l**	
27	Mecoprop	< 0.16 ug/l	
28	2,4-D	< 0.20 ug/l	
29	MCPA	< 0.20 ug/l	
30	Linuron	< 0.50 ug/l	
31	Dichlobenil	< 17 ng/l	
32	2,6-Dichlorobenzamide	N/A	
	Diazinon	< 0.023 ug/l	
	Dimethoate	< 0.029 ug/l	
	Terbutryn	< 0.068 ug/l	
33	PCB's (Sum of 7)	< 0.136 ug/l	**PCB's**
34	Phenols	**35.3 ug/l**	**Phenols**
	m,p- Methylphenol	**70.3 ug/l**	**Cresols**
	o- Methylphenol	< 10.0 ug/l	
35	Lead (Total as Pb)	**11 ug/l**	**Metals**
36	Arsenic (Total as As)	**2.4 ug/l**	
37	Copper (Total as Cu)	**57 ug/l**	
38	Zinc (Total as Zn)	**1080 ug/l**	
39	Cadmium (Total as Cd)	< 0.6 ug/l	
40	Mercury (Total as Hg)	< 0.020 ug/l	
41	Chromium (Total as Cr)	**6 ug/l**	
42	Selenium (Total as Se)	**0.6 ug/l**	
43	Antimony (Total as Sb)	**2.6 ug /l**	
44	Molybdenum (Total as Mo)	**6 ug /l**	
45	Tin (Total as Sn))	< 7 ug/l	

No.	Compound	Result	Group of Compounds
	Organo-Tin	< 0.30 ug/l	
46	Barium (Total as Ba)	**30.5 ug/l**	
47	Boron (Total as B)	**280 ug/l**	
48	Cobalt (Total as Co)	< 2 ug/l	
49	Vanadium (Total as V)	< 4.00 ug/l	
50	Nickel (Total as Ni)	**31 ug/l**	
51	Fluoride (as F)	0.63 mg/l	**General**
52	Chloride	-	
53	TOC	N/A	
54	Cyanide	< 9 ug/l	
	(sample (1764730)		
55	Conductivity	2218 uS/cm (20 degrees C)	**Additional Tests**
56	Hardness (mg/l CaCO3)	N/A	
57	pH	7.5	

Summary of Influent Lines Screening Results 2020:

2020– Influent Lines - Sample References 1764793, 1764794, 1764795 and 1764796 all sampled on 21/10/20.

To isolate the source of parameters detected in the Influent, samples were taken from the 4 main influent feeder lines on 21/10/20 as follows:

- 1514431: Dun Laoghaire – West Pier
- 1514330: Dodder Valley Sewer - UCD FM-10
- 1514432: North Dublin Drainage System – Sutton Sump
- 1514218: 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).

1764793 : Dun Laoghaire – West Pier

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (3.10 ug/l).

Glyphosate (0.594 ug/l) was detected in this sample.

Phenols (22.1 ug/l) and the cresol m,p-Methyl Phenol (40.1 ug/l) were detected in this sample.

The metals Arsenic (2.1 ug/l), Copper (37 ug/l), Zinc (85 ug/l), Chromium (4 ug/l) Selenium (0.98 ug/l), Molybdenum (4 ug/l), Barium (27.4 ug/l) and Nickel (10 ug/l) were detected.

See highlighted parameters **in Table 7.2.4.**

1764794: Dodder Valley Sewer - UCD FM-10

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (2.84 ug/l).

Diazinon (0.008 ug/l) was detected in this sample.

The cresols m,p- Methyl Phenol (0.94 ug/l) and o-Methyl Phenol (0.1 ug/l) were detected in this sample.

The metals Arsenic (2.8 ug/l), Copper (14 ug/l), Selenium (1.6 ug/l) and Barium (20.2 ug/l) were detected.

See highlighted parameters **in Table 7.2.4.**

1764795: North Dublin Drainage System – Sutton Sump

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (4.92 ug/l).

Phenols (42 ug/l) and the cresol m,p- Methyl Phenol (88.5 ug/l) were detected in this sample.

The metals Copper (65 ug/l), Zinc (156 ug/l),Chromium (4 ug/l), Selenium (6.9 ug/l), Tin (10 ug/l), Barium (37.2 ug/l), Boron (0.29 mg/l) and Nickel (21 ug/l) were detected in this sample.

See highlighted parameters in **Table 7.2.4.**

1764796: Ringsend – Main Lift Pumping Station

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (4.64 ug/l).

The PAH Naphthalene (1.9 ug/l) was detected in this sample.

Phenol (21.1 ug/l) and the cresol m,p-Methylphenol (64.9 ug/l) were detected in this sample.

The metals Lead (7.0 ug/l), Arsenic (11 ug/l), Copper (47 ug/l), Zinc (104 ug/l), Chromium (3 ug/l), Selenium (0.64 ug/l), Antimony (1.7ug/l), Molybdenum (7 ug/l), Tin (9 ug/l), Barium (29 ug/l), Boron (0.32 mg/l) and Nickel (25 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 - 2020 PRTR Screening

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

No.	Compound	1764793 Dun Laoire West Pier	1764794 UCD FM 10 (Dodder)	1764795 Sutton Sump	1764796 Ringsend Main Lift
1.	Benzene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 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
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	**3.10 ug/l**	**2.84 ug/l**	**4.92 ug/l**	**4.64 ug/l**
9	Xylenes (all isomers)	<2.00 ug/l	<2.00 ug/l	<2.00 ug/l	<2.00 ug/l
10	Ethyl Benzene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
11	Toluene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
12	Naphthalene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	**1.9 ug/l**
13	Fluoranthene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
14	Benzo(k)fluoranthene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
15	Benzo(ghi)perylene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
16	Indeno(1,2,3-c,d)pyrene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
17	Benzo(b)fluoranthene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
18	Benzo(a)pyrene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
	Acenaphthene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
	Pyrene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
	Anthracene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
	Fluorene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
	Phenanthrene	< 4.0ug/l	<4.0 ug/l	<10 ug/l	<20 ug/l
	Total PAH's	**< 45 ug/l**	**< 45 ug/l**	**< 111 ug/l**	**< 221.9 ug/l**
19	Di(2-ethylhexyl)phthalate (DEHP)	< 20 ug/l	< 20 ug/l	< 50 ug/l	< 100 ug/l

No.	Compound	1764793 Dun Laoire West Pier	1764794 UCD FM 10 (Dodder)	1764795 Sutton Sump	1764796 Ringsend Main Lift
	Di-ethylphthalate	< 4.0 ug/l	< 4.0 ug/l	< 10.0 ug/l	<20.0 ug/l
20	Isodrin	<13 ng/l	< 6 ng/l	< 13 ng/l	< 26 ng/l
21	Dieldrin	<12 ng/l	< 5 ng/l	< 12 ng/l	< 22 ng/l
22	Diuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
23	Isoproturon	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
24	Atrazine	<0.044 ug/l	< 0.020 ug/l	< 0.044 ug/l	< 0.087 ug/l
25	Simazine	<0.054 ug/l	< 0.022 ug/l	< 0.054 ug/l	< 0.108 ug/l
26	Glyphosate	**0.594 ug/l**	< 0.500 ug/l	< 0.500 ug/l	< 0.500 ug/l
27	Mecoprop	<0.16 ug/l	< 0.04 ug/l	< 0.16 ug/l	< 0.16 ug/l
28	2,4-D	<0.20 ug/l	< 0.05 ug/l	< 0.20 ug/l	< 0.20 ug/l
29	MCPA	<0.20 ug/l	< 0.05 ug/l	< 0.20 ug/l	< 0.20 ug/l
30	Linuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
31	Dichlobenil	<9 ng/l	< 4 ng/l	< 9 ng/l	< 17 ng/l
32	2,6-Dichlorobenzamide	N/A	N/A	N/A	N/A
	Diazinon	<0.012 ug/l	**0.008 ug/l**	<0.012 ug/l	<0.023 ug/l
	Dimethoate	<0.020 ug/l	<0.020 ug/l	<0.020 ug/l	<0.029 ug/l
	Terbutryn	<0.034 ug/l	<0.020 ug/l	<0.034 ug/l	<0.068 ug/l
33	PCB's (Sum of 7)	< 70 ng/l	< 33 ng/l	< 70 ng/l	< 136 ng/l
34	Phenols	**22.1 ug/l**	< 4.0 ug/l	**42 ug/l**	**21.1 ug/l**
34	m,p- Methylphenol	**40.1 ug/l**	**0.94 ug/l**	**88.5 ug/l**	**64.9 ug/l**
	o- Methylphenol	< 10 ug/l	**0.1 ug/l**	< 10.0 ug/l	< 10.0 ug/l
35	Lead	< 6.0 ug/l	< 6.0 ug/l	< 6.0 ug/l	**7.0 ug/l**
36	Arsenic	**2.1 ug/l**	**2.8 ug/l**	< 2.4 ug/l	**11 ug/l**
37	Copper	**37 ug/l**	**14 ug/l**	**65 ug/l**	**47 ug/l**
38	Zinc	**85 ug/l**	< 60 ug/l	**156 ug/l**	**104 ug/l**
39	Cadmium	<0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l
40	Mercury	< 0.02 ug/l	<0.02 ug/l	< 0.02 ug/l	<0.02 ug/l
41	Chromium	**4 ug/l**	<2 ug/l	**4 ug/l**	**3 ug/l**
42	Selenium	**0.98 ug/l**	**1.6 ug/l**	**6.9 ug/l**	**0.64 ug/l**
43	Antimony	<1.6 ug/l	<1.6 ug/l	<1.6 ug/l	**1.7 ug/l**
44	Molybdenum	**4 ug/l**	<3 ug/l	<3 ug/l	**7 ug/l**

No.	Compound	1764793 Dun Laoire West Pier	1764794 UCD FM 10 (Dodder)	1764795 Sutton Sump	1764796 Ringsend Main Lift
45	Tin (Total)	<7 ug/l	< 7 ug/l	**10 ug/l**	**9 ug/l**
46	Barium	**27.4 ug/l**	**20.2 ug/l**	**37.2 ug/l**	**29 ug/l**
47	Boron	< 0.23 mg/l	< 0.23 mg/l	**0.29 mg/l**	**0.32 mg/l**
48	Cobalt	< 2 ug/l	< 2 ug/l	< 2 ug/l	< 2 ug/l
49	Vanadium	< 4 ug/l	< 4 ug/l	< 4 ug/l	< 4 ug/l
50	Nickel	**10 ug/l**	< 3 ug/l	**21 ug/l**	**25 ug/l**
51	Fluoride	0.5 mg/l	0.35 mg/l	0.55 mg/l	0.72 mg/l
52	Chloride	-	-	-	-
53	TOC	-	-	-	-
54	Cyanide	< 9 ug/l	< 9 ug/l	< 9 ug/l	< 9 ug/l
		(sample 1764734)	**(sample 1764735)**	**(sample 1764736)**	**(sample 1764737)**
55	Conductivity	1127	565	2134	2043
56	Hardness (mg/l CaCO3)	-	-	-	-
57	pH	7.7	7.8	7.4	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 205,686 cubic metres of leachate was received in 2020 as tabulated below:

Landfill Source	Local Authority Source	Leachate Annual Volume 2020 (m^3/yr)	PE Load (using volume)	% Load to WWTP
Ballynagran (by tanker)	Wicklow County Council	20,024	243.16	0.013%
Kerdiffstown (by tanker)	Kildare County Council	12,572	152.67	0.008%
Bord Na Mona Drehid Landfill (by tanker)	Kildare County Council	9,214	111.89	0.006%
Knockharley Landfill (by tanker)	Meath County Council	12,298	149.34	0.008%
Dunsink Civic Amenity (to sewer)	Fingal County Council	151,578	1,840.66	0.096%
Total		**205,686**	**2,498**	**0.13%**

The daily leachate PE load represents < **0.13 %** of the average daily calculated PE load in 2020 (**1,899,072 PE**).

* PE = m^3/year /0.225 x 366

** % Load to WWTP = m^3/year x 100 / current Hydraulic Capacity (m^3/yr)

Appendix 7.4 - Final Effluent Toxicity Assessment

See attached Effluent Toxicity Report for a sample 1764797 taken on 21/10/20.

This sample complied with the EPA WWTP Licence.

Toxicity Testing Report on behalf of
TMS Environment Ltd.

Sampling Date – 21st October 2020

Sample Details

TMS Environment Limited requested toxicity testing on behalf of their client, Dublin City Council, on their final effluent in October 2020.

The customer collected a composite sample over a 24 hour period on Tuesday, the 20th of October, and the sample was collected by Enva on Wednesday the 21st of October.

The sample was labelled as "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

Certification Details

Certificate Number	211020202043061	**Enva Lab ID**	2043061
Date Received	21st October 2020	**Certificate Date**	04th December 2020
Order Number	N/A	**Test Date**	26th October 2020

Sample Information

Sampled By	Customer
Sampling Procedure	Composite
Storage Conditions	Refrigerated
Temperature (°C)	20°C
pH (at 25°C)	7.37
Dissolved Oxygen (mg/L)	3.8
Dissolved Oxygen (% Saturation)	45%
Conductivity (µs/cm at 25°C)	1930
Salinity (ppt at 20°C)	1.1

Aquatic Toxicity Test Results

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

Conclusions

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

Reported By

Alan O'Driscoll

Alan O'Driscoll

Account Manager

Enva Ireland, Cork

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

There were no samples discounted because of Met Eireann Orange and Red Alerts in 2020.