Annual Environmental Report

2018

Ringsend

D0034-01

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 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

Specified reports are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

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

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant RINGSEND WWTP with a Plant Capacity PE of 1.64 million. The treatment process includes the following:

1.2.1 RINGSEND WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening/Grit Removal

Treatment type	Yes / No	Details
Primary Treatment	Yes	Rectangular primary tanks with Lamella settlers
Secondary Treatment	Yes	SBR and Nereda Pilot Plant
Tertiary Treatment	Yes	UV treatment (during the bathing season)
Sludge Treatment	Yes	Anaerobic digestion followed by thermal drying

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 2.2 Discharges from the agglomeration.

1.3 ELV Overview

1.3.1 RINGSEND WWTP

Compliance Status	
Were all parameters compliant for RINGSEND WWTP treatment plant	No
The following parameters exceeded the emission limit values	cBOD COD Total Suspended Solids Total Nitrogen Total Phosphorus E. coli

The effluent parameters pH and Toxicity complied with the ELVs during 2018.

1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
Ringsend WWTP	Biocake	5,122	Tonnes/Year	24	Agriculture
Ringsend WWTP	Biofert Dried Sludge	13,663	Tonnes/Year	92	Agriculture

Annual Statement of Measures:

Dublin City Council Functional Area:

There were no major capital or operational changes undertaken in 2018.

South Dublin County Council Functional Area

There were no major capital or operational changes undertaken in 2018.

Fingal County Council Functional Area:

There were no major capital or operational changes undertaken in 2018.

Dún Laoghaire Rathdown County Council Functional Area

There were no major capital or operational changes undertaken in 2018.

Meath County Council Functional Area

There were no major capital or operational changes undertaken in 2018.

2 MONITORING REPORTS SUMMARY

2.1 Summary report on monthly influent monitoring

A summary of influent monitoring for the treatment plant is presented in below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

2.1.1 Influent Monitoring Summary - RINGSEND WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr mg/l	244	1,328.00	506.13
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	142	583.00	243.54
Total Nitrogen mg/l	102	54.10	34.44
Total Phosphorus (as P) mg/l	100	8.13	5.02
Suspended Solids mg/l	244	878.00	244.59
Hydraulic Capacity	N/A	1,141,604	470,071

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5, if applicable.

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is greater than the peak Treatment Plant Capacity as detailed further in Section 3.2.

2.2 Discharges from the agglomeration

2.2.1 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	141 **	244***	244***	101 *	102*	244***	1	
Number of sample results above WWDL ELV	54	47	144	100	100	0	0	Composite samples taken except for toxicity
Number of sample results above ELV with Condition 2 Interpretation included	20	14	42	100	95	0	0	Composite samples taken except for toxicity
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	3.71	19.96	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 2.2 *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	244	244	244	103	56*	46	244	*Licence specifies 1st May to 31st August for E. Coli compliance
Number of sample results above WWDL ELV/not achieving min % reduction	-	-	-	-	5	0	-	Composite sample taken for chemistry parameters
Number of sample results above ELV with Condition 2 Interpretation included	-	-	-	-	5	0	-	
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	** 5 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.

Significance of Results:

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 54 samples non-compliant with the ELV in relation to cBOD. The non-compliance is due to overloading. There were 47 samples non-compliant with the ELV in relation to COD. The non-compliance is due to overloading. There were 144 samples non-compliant with the ELV in relation to TSS. The non-compliance is due to overloading. There were 100 samples

non-compliant with the ELV for TP. The non-compliance was due to no P removal treatment on site. There were 100 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 01/05/18 to 31/08/18 (5 breaches) and during the Bathing Season (3 breaches). The three breaches of the Condition 2 ELV occurred on the 14/06/2018 (130,100 MPN/100ml), the 20/06/2018 (172,300 MPN/100 ml), and the 19/07/2018 (> 241,960). The impact on receiving waters is assessed further in Section 2.3.

2.3 Ambient monitoring summary

2.3.1 Ambient Monitoring Report 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	Moderate	n/a 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	Moderate	Yes Impacts in the near field and the plume of the sewage discharge – See Section 2.3.2 below. Liffey Estuary tidal
Downstream monitoring points	***Liffey Estuary Lower***	Unknown	No	No	No	No	Moderate	Yes Impacts in the near field and the plume of the sewage discharge – See Section 2.3.2 below.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	*Irish Grid Reference*	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
								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	No See Section 2.3.2 below.
Downstream monitoring points	***Bathing Waters*** Dollymount Bathing Zone Sandymount Merrion	Unknown	**Yes**	No	No	No	**(*2018 EPA Bathing Water Status*)** **Good** **Poor** **Poor**	 See Section 2.3.2 below. Investigations Ongoing. Investigations Ongoing.

2.3.2 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 WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The 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 discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.
- 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 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 2018 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, S.I. No. 254 of 2001. The European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009), sets 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 2018 are tabulated below:

Survey No. and Month 2018	Date	High Tide Time	Height (m OD)	Low Tide Time	Height (m OD)	Tidal Status during Survey
1. April	11/04/18	09.23	3.33	15.24	1.19	High to Ebb
	26/04/18	09.50	3.77	15.39	0.69	High to Ebb
2. May	09/05/18	07.29	3.24	13.29	1.30	High to Ebb
	10/05/18	08.35	3.32	14.29	1.18	High to Ebb
3. June	20/06/18	05.34	3.94	11.33	0.74	Mid-Ebb to Ebb
	21/06/18	06.43	3.85	12.37	0.86	Mid-Ebb to Ebb
4. July	11/07/18	10.44	3.93	16.27	0.86	Mid-Flow to Mid-Ebb
	12/07/18	11.36	4.07	17.15	0.57	Mid-Flow to Mid-Ebb
5. August	08/08/18	09.29	3.68	15.18	1.04	Mid-Flow to Mid-Ebb
	29/08/18	13.38	3.79	07.00	0.74	Ebb to High
6. September	06/09/18	09.18	3.61	15.06	1.19	High to Mid-Ebb

2.3.2.1 Marine Monitoring Summary – ASW2 to ASW10

A total of 6 surveys were carried out in the Liffey and Tolka Estuaries during 2018 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 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 except for:

- **ASW10** where the DO was supersaturated (135% Sat.) on 21/06/18.

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

- **AS W3S –** BOD value was 5 mg/l O2 on 09/05/18.
- **AS W5S** - BOD value was >6 mg/l O2 on 09/05/18.
- **AS W10S** - BOD value was 5 mg/l O2 on 10/05/18.

Six exceedances of Molybdate Reactive Phosphate (MRP) standards occurred in the near field of the Ringsend discharge at ASW2, ASW3, ASW4 and AS W5 within the mixing zone. The non-compliant median MRP results were as follows:

Location	MRP 2018 Median Result	S.I. No. 272 of 2009 Standard	Comment
		60 ug/l as P (median) at 0-17% PSU to 40 ug/l as P (median) at 35% PSU	
ASW2 (Surface)	**518 ug/l as P**		Close to SW1 Outfall within the Mixing Zone
ASW3 (Surface)	**112 ug/l as P**		Close to SW1 Outfall within the Mixing Zone
ASW3 (Depth)	**49 ug/l as P**		Close to SW1 Outfall within the Mixing Zone
ASW4 (Surface)	**101 ug/l as P**		Close to SW1 Outfall within the Mixing Zone
ASW4 (Depth)	**43 ug/l as P**		Close to SW1 Outfall within the Mixing Zone
AS W5 (Surface)	**43 ug/l as P**		Close to SW1 Outfall within the Mixing Zone

2.3.2.2 Marine Monitoring – 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 2018, 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 for the above locations is presented below and complete water quality data is presented in **Appendix 7.1.3.**

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

BOD Saline results exceeded the limit of 4 mg/l O2 at:

- **DB 410 (Surface)** on 09/05/18 (**>6 mg/l O2**).
- **DB 320 (Surface)** on both 11/07/18 **(6 mg/l O2)** and 06/9/18 **(6 mg/l O2).**
- **DB 320 (Depth)** on 11/07/18 **(6 mg/l O2).**

14 Molybdate Reactive Phosphate (MRP) median exceedances occurred at **8** locations as follows:

Location	MRP 2018 Median Result	S.I. No. 272 of 2009 Standard	Comment
	Liffey Estuary	< 40ug/l P(med) < 60 ug/l P (med)	
DB020 (Depth)	**89 ug/l P**		SW1 Discharge and riverine impacts
DB120 (Depth)	**45 ug/l P**		SW1 Discharge and riverine impacts
DB210 (Surface) **DB210 (Depth)**	**51 ug/l P** **45 ug/l P**		SW1 Discharge and riverine impacts
DB410 (Surface)	**377 ug/l P**		SW1 Discharge Impact
	Tolka Estuary		
DB320 (Depth)	**85 ug/l P**		SW1 Discharge and riverine impacts
DB330 (Surface)	**67 ug/l P**		SW1 Discharge and riverine impacts
DB330 (Depth)	**45 ug/l P**		SW1 Discharge and riverine impacts
DB330 (Composite)	**70 ug/l P**		SW1 Discharge and riverine impacts
DB340 (Surface)	**41 ug/l P**		SW1 Discharge and riverine impacts
DB340 (Composite)	**47 ug/l P**		SW1 Discharge and riverine impacts
DB350 (Surface)	**134 ug/l P**		SW1 Discharge and riverine impacts
Location	**MRP 2018 Median Result**	**S.I. No. 272 of 2009 Standard**	**Comment**
DB350 (Depth)	**87 ug/l P**		SW1 Discharge and riverine impacts
DB350 (Composite)	**82 ug/l P**		SW1 Discharge and riverine impacts

2.3.2.3 Marine Monitoring – Dublin Bay, 2018 - Points Agreed with the EPA

A total of 4 surveys were carried out at 9 locations in Dublin Bay during 2018. These locations – 6 coastal waters and 3 Irish Sea locations (*), 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 for the above locations is presented below and complete water quality data is presented in **Appendix 7.1.4.**

Monitoring data for 2018 shows full compliance with temperature, dissolved oxygen (lower) and dissolved oxygen (upper).

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

The median chlorophyll High to Good limit (cold acetone extraction = < 2.5 ug/l) was complied with at all 9 sampling locations in 2018.

There were **no other impacts** on coastal and Irish Sea water quality during surveys carried out in 2018.

2.3.2.4 Shoreline Monitoring – 2018 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 2018 bathing season:

- ASW 11 - Dollymount North, Shoreline Sampling Location
- **ASW 12 - Dollymount Bathing Zone*** **Designated bathing area**
- ASW 13 - Dollymount South Shoreline Sampling Location
- ASW 14 - Bull Wall Wood Causeway Shoreline Sampling Location
- ASW 15 - Poolbeg Outfall (Main) Final effluent discharge location
- ASW 16 - Half Moon Club Southside Shoreline Sampling Location
- **ASW 17 – Sandymount Strand*** **Designated bathing area**
- **ASW 18 – Merrion Strand*** **Designated bathing area**

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 has been determined by the EPA for the year 2018. The Status of the different designated locations is also available on the EPA website (www.beaches.ie).

Note the widespread occurrence of Ectocarpus at ASW 11, 12, 13, the 3 Dollymount sampling locations.

Designated bathing water at Dollymount (Bathing Zone) was allocated GOOD status in 2018 by the EPA.

Designated bathing waters at Sandymount and Merrion were allocated POOR status in 2018.

Investigative monitoring is ongoing.

Site Location	ASW 12	ASW 17	ASW 18
No. of samples (non-investigative)	19	19	19
2018 Annual Status	Good	Poor	Poor

The remaining 5 locations are not designated bathing waters. Monitoring data for non-designated bathing waters between 23/05/18 and 10/09/18 is included in **Appendix 7.1.5.**

2018 - 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

3 OPERATIONAL REPORTS SUMMARY

3.1 Treatment Efficiency Report

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:

3.1.1 Treatment Efficiency Report Summary - RINGSEND WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
cBOD	42,389,463	5,350,717	87
COD	84,814,812	19,678,555	77
SS	40,987,878	11,282,392	72
TN	5,938,853	3,390,540	43
TP	859,620	631,119	27

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

3.2 Treatment Capacity Report Summary

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

RINGSEND WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	959,040
DWF to the Treatment Plant (m^3/day)	397,440
Current Hydraulic Loading - annual max (m^3/day)	895,950
Average Hydraulic loading to the Treatment Plant (m^3/day)	470,071
Organic Capacity - Design / As Constructed (PE)	1,640,000
Organic Capacity - Current loading (PE) - Peak Week	2,327,680
Organic Capacity – Remaining (PE)	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

3.3 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
55	Investigation Sewage Flooding - Below Ground Waste Water	0	55

South Dublin County Council Functional Area

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
38	Investigation Sewage Flooding - Below Ground Waste Water	0	38

Fingal County Council Functional Area:

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Investigation Pollution Incident - Below Ground Waste Water	0	1
23	Investigation Sewage Flooding - Below Ground Waste Water	0	23

Dún Laoghaire Rathdown County Council Functional Area

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
5	Investigation Pollution Incident - Below Ground Waste Water	0	5
93	Investigation Sewage Flooding - Below Ground Waste Water	0	93

Meath County Council Functional Area

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
32	Investigation Sewage Flooding - Below Ground Waste Water	0	32

3.4 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.

3.4.1 Summary of Incidents for Full Agglomeration

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Non-compliance	WWTP upgrade required to meet ELV	1	Yes	No
Non-compliance	Inadequate Operational Procedures	1	Yes	Yes
Non-compliance	Plant or equipment breakdown at WWTP	1	No	Yes
Non-compliance	Inadequate Operational Procedures	1	Yes	Yes
Other	Plant or equipment maintenance at WWTP	1	No	Yes
Other	Plant or equipment breakdown at WWTP	1	No	Yes
Other	EO caused by ragging or blocking	1	No	No
Other	EO caused by pump failure	1	No	No
Other	Plant or equipment breakdown at WWTP	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	EO caused by power failure	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Other	1	No	No
Spillage	Other	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	SWO Exceptional rainfall	1	Yes	No
Uncontrolled release	EO caused by ragging or blocking	1	No	No
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	No
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	Inadequate Operational Procedures	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Other	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	EO caused by pump failure	2	No	Yes
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	Other	1	No	No
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	No
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	No
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	No
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	No

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	61
Number of Incidents reported to the EPA via EDEN in 2018	61
Explanation of any discrepancies between the two numbers above	N/A

3.5 Sludge / Other inputs to the 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*	11,647	m^3/yr	142 PE/day from Volume	0.0073 % (PE)	Yes	Yes	Yes
Industrial / Commercial Sludge	31,425	m^3/yr	383 PE/day from Volume	0.0197 % (PE)	Yes	Yes	Yes
Landfill Leachate (delivered by tanker) – Ballynagran Landfill – Wicklow County Council	22,691	m^3/yr	276.3 PE/day from Volume	0.014 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Kerdiffstown Landfill – Kildare County Council	9,842	m^3/yr	119.8 PE/day from Volume	0.0062 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Knockharley Landfill – Meath County Council	12,799	m^3/yr	155.8 PE/day from volume	0.0080 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Drehid Landfill Bord Na Mona Wicklow County Council	21,846	m^3/yr	266.0 PE/day from Volume	0.0137 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	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) – Rampere– Wicklow County Council	88	m^3/yr	1.0 PE/day from volume	<0.00005 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by sewer network) Dunsink Civic Amenity – Fingal County Council	147,216	m^3/yr	1,793 PE/ day from Volume	0.092 % (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.

** Based on average Daily PE load to WWTP (*Average Daily PE load = 116,383.95 (Mean BOD Kg/day) ÷ 0.06 = 1,939,733*)

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 – Dublin City Council Functional Area

The Storm Water Overflow Summary Report, **Tables 4.1.1** and **4.1.1a** below. The 86 CSOs highlighted in blue are those that relate to the city centre catchment, the 21 CSOs highlighted in red have been identified as 'not a CSO', and the 122 CSOs highlighted in grey fall outside the city centre catchment.

In 2017, SWO activations and discharge volumes were estimations based on outputs from a verified DAP Model. In all 2018 AERs, only monitored flow data from a calibrated flow meter are being reported.

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
CSO36DCC	317234	234294	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17342203
CSO49DCC	313699	234415	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13346404
CSO84DCC	315139	234124	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15341109
CSO47DCC	315278	234216	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15342204
CSO51DCC	315102	233451	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15331433
CSO69DCC	310913	233836	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO10339801
CSO34DCC	316933	235409	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16359411
CSO1DCC	314772	234232	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14347206
CSO48DCC	315133	234184	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15341117
CSO33DCC	317191	234633	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17341601
CSO72DCC	312286	233530	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12332506
CSO89DCC	317775	234427	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17347411
CSO14DCC	316849	234337	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16348302
CSO80DCC	314205	234270	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14342204
CSO5DCC	317054	235998	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17360001
CSO11DCC	316107	234398	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16341310
CSO73DCC	317455	235389	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17354303

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
CSO2DCC	314663	234263	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14346214
CSO66DCC	313731	234212	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13347206
CSO83DCC	313953	234344	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13349307
CSO62DCC	317394	234266	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17343203
CSO7DCC	314962	233226	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14339210
CSO15DCC	312958	234298	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12349204
CSO65DCC	313820	234224	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13348206
CSO60DCC	315398	233788	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15333701
CSO87DCC	316865	234654	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16348605
CSO35DCC	316885	233670	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16338601
CSO10DCC	313533	233809	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13335803
CSO71DCC	310510	234079	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO10345001
CSO26DCC	312632	233616	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12336604
CSO46DCC	315717	234317	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15347306
CSO29DCC	315417	234244	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15344205
CSO23DCC	316108	234474	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16341406
CSO76DCC	311757	233212	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO11337206
CSO45DCC	315551	234270	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15345206
CSO19DCC	316857	236017	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16368009
CSO25DCC	314580	234294	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14345210
CSO28DCC	313210	233631	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13332616
CSO50DCC	315113	233446	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15331414
CSO27DCC	315533	234142	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15345113
CSO21DCC	315487	234037	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15344011
CSO82DCC	317299	235411	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17353415
CSO18DCC	316852	236022	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16368001
CSO8DCC	316161	236672	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16361609
CSO74DCC	312533	233579	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12335507
CSO70DCC	310244	234243	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO10342201
CSO68DCC	310355	234122	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO10343105
CSO78DCC	314686	234201	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14346205
CSO24DCC	314430	234315	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14344316

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
CSO43DCC	313387	233674	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13333602
CSO6DCC	314959	233223	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14339210
CSO61DCC	315322	233808	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15333801
CSO20DCC	313539	233798	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13335709
CSO38DCC	312690	234346	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12346304
CSO13DCC	314893	234204	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14348209
CSO9DCC	316043	236686	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16360601
CSO12DCC	316024	234360	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16340308
CSO17DCC	312966	234298	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12349202
CSO37DCC	312015	233665	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12330604
CSO3DCC	315862	234379	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15348308
CSO40DCC	309728	234678	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO09347603
CSO41DCC	314987	234131	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14349101
CSO44DCC	316904	236073	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO16369001
CSO52DCC	317843	233804	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17338807
CSO53DCC	309604	234376	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO09346312
CSO55DCC	312990	233670	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12339609
CSO57DCC	313022	233676	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13330605
CSO58DCC	313064	233680	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13330604
CSO59DCC	314244	234324	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14342308
CSO67DCC	310350	234128	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO10343107
CSO77DCC	314492	234246	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14344202
CSO79DCC	314322	234267	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14343207
CSO85DCC	315136	234112	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO15341103
New SWO	317371	235907	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17353903
Not Applicable	313217	233706	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13332705
Not Applicable	310278	234430	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO10342403
Not Applicable	317235	235455	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17352412
Not Applicable	313375	233124	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13333107
Not Applicable	317667	234933	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17346901
Not Applicable	317628	234924	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17346909
Not Applicable	317494	234699	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17344601

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
Not Applicable	312970	234365	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12349301
Not Applicable	310814	233884	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO10338801
Not Applicable	308816	234950	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO08348915
Not Applicable	313272	233611	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13332604
Not Applicable	314162	233929	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO14331902
CSO88DCC	317683	234884	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17346807
CSO81DCC	317303	235416	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17353415
CSO32DCC	317182	234623	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17341607
CSO30DCC	312010	233527	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12330604
CSO22DCC	311516	232830	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO11325805
CSO4DCC	317065	235991	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17350906
CSO75DCC	312545	233667	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO12335605
CSO63DCC	314704	234412	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14347406
CSO105DCC	317843	233804	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO17338807
CSO16DCC	312966	234298	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12349202
CSO54DCC	312990	233670	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO12339609
CSO56DCC	313022	233676	Y	No	Unknown	Unknown	No	Not Monitored	Not Monitored	SO13330605
CSO64DCC	314700	234516	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14347510
Not Applicable	311915	236281	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO11369201
Not Applicable	313857	233351	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13338304
Not Applicable	313909	233340	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13339307
Not Applicable	312628	235825	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO12356809
Not Applicable	312810	235654	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO12358608
Not Applicable	312536	235894	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO12355807
Not Applicable	317075	235588	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17350508
Not Applicable	311497	233703	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO11334707
CSO186DCC	317881	232507	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17328507
CSO180DCC	318107	232850	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18321802
CSO171DCC	317550	232447	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17325401
CSO176DCC	317639	232519	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17326503
CSO168DCC	318139	233413	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18331407
CSO156DCC	322127	237601	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO22371604

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
CSO184DCC	317824	232486	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17328405
CSO118DCC	316968	236195	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO16369104
CSO103DCC	310784	232218	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO10327207
CSO128DCC	321116	237636	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO21371602
CSO188DCC	314451	230170	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14304105
CSO102DCC	310741	232270	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO10327205
CSO153DCC	313415	238521	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13383501
CSO164DCC	323611	238744	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO23386705
CSO173DCC	317827	231358	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17318310
CSO181DCC	315892	232164	Y	Yes	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15328193
CSO152DCC	321004	236217	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO2130202
CSO169DCC	317909	232497	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17329403
CSO112DCC	315347	237184	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15373102
CSO134DCC	318903	237248	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18378205
CSO142DCC	323129	238499	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO23381414
CSO177DCC	314416	231521	Y	Yes	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14314503
CSO93DCC	319319	231456	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19313502
CSO94DCC	310380	232486	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO10323401
CSO125DCC	318032	236337	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18360302
CSO147DCC	322791	238174	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO22387104
CSO190DCC	317176	230639	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17301604
CSO119DCC	317476	236267	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17364203
CSO182DCC	314820	232377	Y	Yes	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14328311
CSO140DCC	322306	241250	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO22413204
CSO107DCC	318741	232076	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18327003
CSO141DCC	321150	238284	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO21381202
CSO146DCC	315371	237860	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15373801
CSO161DCC	315285	239290	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15394203
CSO97DCC	319373	230608	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19303601
CSO178DCC	314413	231521	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14314501
CSO167DCC	317890	231357	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17318301
CSO124DCC	317564	236640	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17365601

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
CSO187DCC	316306	230383	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO16303302
CSO150DCC	321216	238352	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO21382304
CSO136DCC	318559	237699	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18375603
CSO170DCC	317699	231474	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17316403
CSO114DCC	315933	237459	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15379403
CSO120DCC	317288	237032	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17372001
CSO189DCC	316956	230477	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	
CSO131DCC	320166	237863	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO20371802
CSO175DCC	317743	231303	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17317302
CSO151DCC	313201	236289	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13362202
CSO139DCC	313685	238438	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13386401
CSO101DCC	319921	230594	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19309504
CSO90DCC	311589	231731	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO11315707
CSO98DCC	319373	230608	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19303603
CSO126DCC	319927	235869	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19359806
CSO197DCC	316297	237050	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO16372001
CSO130DCC	316652	238118	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO16383101
CSO31DCC	315899	236809	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15368802
CSO135DCC	313840	237484	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13378401
CSO129DCC	314692	238454	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14386402
CSO157DCC	313270	238784	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13382701
CSO100DCC	313421	232721	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13324701
CSO104DCC	313403	232803	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13324801
CSO106DCC	319384	231534	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19313502
CSO109DCC	317414	238590	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17384504
CSO122DCC	319420	239940	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19394906
CSO132DCC	312746	239249	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	
CSO133DCC	313170	238854	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13381805
CSO143DCC	314316	238253	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14383203
CSO144DCC	320761	238396	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO20387301
CSO149DCC	313240	238954	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13381805
CSO154DCC	322130	239548	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO22391501

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
CSO155DCC	321529	237974	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO21375901
CSO158DCC	323132	241110	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	
CSO160DCC	313721	237669	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13377607
CSO162DCC	321555	235735	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO21355703
CSO163DCC	314106	237565	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14371501
CSO165DCC	320130	235782	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO20351704
CSO166DCC	317562	230767	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17305702
CSO174DCC	317852	231363	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17318310
CSO179DCC	318132	233429	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18331410
CSO183DCC	316790	230086	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	In South Dublin CC
CSO185DCC	316609	232018	Y	Yes	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO16325007
CSO195DCC	314828	229637	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	In South Dublin CC
CSO196DCC	314817	229635	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	In South Dublin CC
CSO42DCC	315978	236912	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15369902
CSO91DCC	311398	230549	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	
CSO92DCC	313440	232441	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13324405
CSO95DCC	318880	233947	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18338911
CSO96DCC	313725	232628	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13327607
CSO99DCC	313291	229848	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13292801
Not Applicable	318105	232849	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18321802
Not Applicable	317326	233389	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17333303
Not Applicable	318249	230834	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18302806
Not Applicable	317785	231204	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17317203
Not Applicable	315273	237272	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15372202
Not Applicable	318892	237254	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO18378205
Not Applicable	319051	237218	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19370201
Not Applicable	319029	237382	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19370306
Not Applicable	321437	236402	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO21364410
Not Applicable	319242	235931	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19352902
Not Applicable	321196	236118	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO21361101

SWO Code	Grid Reference			DECLG Assessment Criteria						
PT_CD	EASTING	NORTHING	Included in S.4 of WWDL	Q1	Q2	Q3	Q4	No. of Times Activated in 2018	Total Volume Discharged in 2018 (m^3)	STC25 Ref
Not Applicable	319348	237237	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19373202
Not Applicable	316237	236869	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO16362801
Not Applicable	317482	236223	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17364201
Not Applicable	317527	236397	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17365302
Not Applicable	317858	236891	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17368804
Not Applicable	315674	237839	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO15376802
Not Applicable	320457	237749	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO20374701
Not Applicable	322654	239351	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO22396301
Not Applicable	323087	239136	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO23390101
Not Applicable	313840	237484	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO13378401
Not Applicable	319444	237359	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19374302
Not Applicable	314609	237773	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO14376708
Not Applicable	312837	239706	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO12398709
Not Applicable	317275	236972	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17362907
Not Applicable	319687	233798	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO19336701
Not Applicable	317083	240679	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	In Fingal
Not Applicable	320743	236300	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO20367301
Not Applicable	317339	236668	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17363605
Not Applicable	317840	236426	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO17368401
Not Applicable	320292	236509	Y	No	Unknown	Unknown	Unknown	Not Monitored	Not Monitored	SO20362507

4.1.1a Inspection Summary Report – Dublin City Council Functional Area

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Not Monitored
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes, where applicable

SWO Summary	
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

4.1.2 SWO Identification – South Dublin County Council Functional Area

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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
SDCCPS01	702432X,735066Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS01	702432X,735066Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS02	703221X,735072Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS03	703964X,734515Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS04	707012X,735193	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS05	708588X,734325Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS06	703073X,732117Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS07	706856X, 32230Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS08	700098X,728983Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS09	701184X,728875Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS10	701532X,727416Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS11	712281X,729622Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS12	711483X,728060Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not 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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
SDCCPS13	707631X,735459Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS14	704673X,732849Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS15	704314X,732587	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS16	708002X,730773Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS17	707770X, 729780Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS18	705601X,727665Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS19	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS21	701651X,734384Y	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCPS22	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSN01	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSN02	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSN03	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSN04	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSN05	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSN06	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSW015	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO01	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not 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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
SDCCSWO02	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO03	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO04	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO05	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO06	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO07	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO08	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO09	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO10	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO11	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO12	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO13	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSWO14	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSW016	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSW017	TBC	TBC	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
SDCCSW018	310207.37X, 27496.47Y	TBC	Low	To be Assessed	Not Monitored	Not Monitored	Not Monitored

4.1.2a Inspection Summary Report – South Dublin County Council Functional Area

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Not Monitored
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Not Assessed
The SWO Assessment included the requirements of relevant of WWDL schedules?	Not Assessed
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	Not Applicable

There are currently DAPs being undertaken on the MLPS and Dodder Valley sewer. MLPS DAP is expected to be completed Q2 2022 and the Dodder Valley DAP is due to be completed Q1 2021. The DAPs will encompass both Storm Water Overflow and network assessments and will therefore comprehensively address the need to carry out separate Storm Water Overflow or Sewer Integrity Assessments.

4.1.3 SWO Identification – Fingal County Council Functional Area

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2018 (No. of events)	Total volume discharged in 2018(m^3)	Monitoring Status
Fingal-SW21	317088E, 240688N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW22	318083E, 241519N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW23	331227E, 241541N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW26	324686E, 240383N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not 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)	Compliance with DoEHLG Criteria	No. of times activated in 2018 (No. of events)	Total volume discharged in 2018(m^3)	Monitoring Status
Fingal-SW27	324837E, 239149N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW32	324858E, 244368N	A3	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal SW33	323560E, 242484N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW34	323855E, 243158N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW35	323969E, 241503N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW37	324179E, 240115N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW38	324387E, 239355N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW39	323228E. 239139N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW40	323086E, 239133N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW41	323299E, 238441N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not 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)	Compliance with DoEHLG Criteria	No. of times activated in 2018 (No. of events)	Total volume discharged in 2018(m^3)	Monitoring Status
Fingal-SW42	326312E, 238143N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW43	325886E, 239468N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW44	326155E, 239701N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW45	327347E, 239672N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW46	327789E, 239464N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW47	328391E, 239452N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW48	328800E, 239337N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW49	328711E, 239308N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW50	306076E, 243269N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW51	308577E, 238545N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not 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)	Compliance with DoEHLG Criteria	No. of times activated in 2018 (No. of events)	Total volume discharged in 2018(m^3)	Monitoring Status
Fingal-SW52	308318E, 238766N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW53	309614E, 238262N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW54	308007E, 238729N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW55	308950E, 237336N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored
Fingal-SW56	306505E, 237441N	Yes	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored

4.1.3a Inspection Summary Report – Fingal County Council Functional Area

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Not Monitored
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Not Assessed
The SWO Assessment included the requirements of relevant of WWDL schedules?	Not Assessed
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	Not Applicable

4.1.4 SWO Identification – Dún Laoghaire Rathdown County Council Functional Area

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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
DLRCC/B5/R/001	317559, 230769	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/002	316935, 230487	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/003	319999, 230505	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/004	316783, 230085	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/005	316783, 230085	SDCC	Low	To be Assessed	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/006	316689, 230050	SDCC	Low	To be Assessed	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/007	315556, 229632	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/008	315434, 229529	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/009	315522, 229162	Yes	Medium	Not Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/010	316969, 229568	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/011	316987, 229386	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/012	316984, 229359	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/013	316940, 229706	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/014	319938, 230443	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/015	320280, 230216	Yes	Low	Meeting	Not Monitored	Not Monitored	Not 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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
DLRCC/B5/R/016	320631, 230024	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/017	320837, 229937	Yes	Medium	Not Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/018	321247, 229477	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/019	321124, 229395	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/020	321567, 229551	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/021	319142, 227929	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/022	320736, 228221	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/023	321681, 229019	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/024	321681, 229019	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/025	321806, 229409	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/026	322033, 228395	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/027	322573, 228364	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
DLRCC/B5/R/028	324953, 228312	No	Low	To be Assessed	Not Monitored	Not Monitored	Not Monitored

4.1.4a Inspection Summary Report - Dún Laoghaire Rathdown County Council Functional Area

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Not Monitored
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
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

4.1.5 SWO Identification – Meath County Council Functional Area

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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
S.W 1 Meath	307000, 251960	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
S.W 2 Meath	307220, 251800	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
S.W 3 Meath	306100, 252760	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
S.W 4 Meath	305890, 252230	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
S.W 5 Meath	302640, 251610	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
S.W 6 Meath	303240, 251560	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
S.W 7 Meath	306676, 245818	Yes	Low	Meeting	Not Monitored	Not Monitored	Not 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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
S.W 8 Meath	306330, 246270	Yes	Low	Meeting	Not Monitored	Not Monitored	Not Monitored
New SWO/EO – Code TBC	TBC	No	Not assessed	Not assessed	Not Monitored	Not Monitored	Not Monitored

4.1.5a Inspection Summary Report - Meath County Council Functional Area

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Not Monitored
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	New SWO/EO Not Assessed
The SWO Assessment included the requirements of relevant of WWDL schedules?	Not 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:

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 400,000 p.e. Capacity Upgrade Design Build (DB) contract was signed at the end of 2017. The contract mobilised on site on 31st January 2018 and construction is progressing. The upgrade works are planned to be operational in mid 2020 with commissioning to follow. Irish Water submitted a new Strategic Infrastructure Development (SID) application and accompanying Environmental Impact Assessment Report (EIAR) to An Bord Pleanála on 6th June 2018. The statutory consultation period was from 12th June to 31st July 2018. An Bord Pleanála have determined that an Oral Hearing is not required. A decision on the application is	All of the timelines detailed for the remaining elements of the project are subject to planning (a decision on the planning application is awaited from An Bord Pleanála), procurement, a timely capital consent process and growth of loading in the catchment. The retrofit works are expected to take until 2025 to complete. However, the proposed upgrade is currently programmed to start producing an effluent in line with the parameters set out in the UWWTD by end of 2022 It is important to note that this programmed 2022 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

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
					expected in the first half of 2019. The application seeks permission to carry out works to facilitate the use of the AGS technology in the existing treatment tanks and to omit construction of the Long Sea Outfall Tunnel (see comments column re: completion dates for the SBR retrofit). Retrofitting the AGS technology to the existing treatment tanks is scheduled to commence in 2020. A phosphorous recovery facility is also required to bring the plant into compliance and is included in the above-mentioned planning consent application. This work is planned to commence in 2020 and complete in 2022.	12 months from that date (on attaining 12 months compliance with the UWWTD ELVs).
Upgrade storm water storage tank at WWTP as necessary	C.1	22nd December 2015	Not applicable	Not applicable	There are no current plans to upgrade the storm water storage tanks at the Works. This will be reassessed on completion of the drainage areas plans.	
City Centre Sewerage Scheme (CCSS)	C.3	None specified	Not applicable	In progress	Not Applicable	Stage 3 Complete, Stage 4 ongoing/ options development.
North Docklands Sewerage Scheme	C.3	None specified	Not applicable	Work on Site	Not Applicable	Operational
Rathmines and Pembroke (R&P) Scheme now renamed as	C.3	None specified	Not applicable		DAP progressing though Stages 1 & 2.	

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
'Rathmines – Pembroke and Grand Canal Tunnel Drainage Area Study'						

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

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)	SBR Retrofit Works and separately a Phosphorous Recovery Facility are to commence in 2020 (subject to An Bord Pleanála consent, procurement and a timely capital consent process). The proposed upgrade is currently programmed to produce an effluent in line with the parameters set out in the UWWTD by end of 2022. As outlined above, it is important to note that this programmed 2022 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).	
	DAP ongoing for: NDDS/NF/Sulton OS Dodder Valley MLPS Rathmine & Pembroke		Progressing though Stages 1 & 2.	

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						

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

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

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	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 Doldrum Bay	A.3	31/12/2011	Y	Proceeding to detailed design.	End of Q1 2021	Detailed design ongoing.
Discharge to cease: S5 Fingal to the Irish Sea	A.3	27/10/2010	Y	Completed	Not Applicable	

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

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

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
None				

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						

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

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	Not Applicable	31/12/2019	
Dun Laoghaire Sewerage Scheme Phase 1	Contract 2 - Network Upgrade Sandyford/ Stillorgan Improvement-Tunnel - Removal of deficiencies in capacity	Not Applicable	31/12/2019	
Goatstown Rehab Project	Sewer Rehab - Increase in Capacity	Not Applicable	31/12/2019	
Churchtown landscape Rd	Sewer Rehab - Increase in Capacity	Not Applicable	31/12/2019	

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Westpier Drainage Area Plan	Sewer Network Survey - Increase in Capacity	Not Applicable	31/12/2019	Progressing though DAP Stages 1 & 2.

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						

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

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

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Install bigger sump drainage pumps	Install bigger sump drainage pumps: a) at Ashbourne PS b) at Kilbride PS	Not Applicable	Completed	
Raise pumps electrical contractor control boxes out of the wet well sumps	Raise pumps electrical contractor control boxes out of the wet well sumps; a) at Ashbourne PS b) at Kilbride PS	Not Applicable	Completed	
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	a) 60% competed b) 100% completed

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Improving Manholes	Improving Manholes between Rathoath & Kilbride	Not Applicable	Unknown	
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	30% completed

4.2.2 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.

5.1 Licence Specific Reports Summary Table

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**.
Drinking Water Abstraction Point Risk Assessment	No	No		Not Applicable
Habitats Impact Assessment	No	No		Not Applicable
Shellfish Impact Assessment	No	No		Not Applicable
Pearl Mussel Report	No	No		Not Applicable
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**
Small Streams Risk Score	No	No		Not Applicable

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	Yes	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.
Drinking Water Abstraction Point Risk Assessment	Not Applicable	
Habitats Impact Assessment	Not Applicable	
Shellfish Impact Assessment	Not Applicable	
Pearl Mussel Report	Not Applicable	
Toxicity/Leachate Management	No	Annual leachate volume at Ringsend is not significant at 214,482 cubic metres. This constitutes 588 cubic metres per day (0.128 % v/v) based on the 2018 mean daily influent volume of 459,597 cubic metres.
Toxicity of Final Effluent Report	No	Treated effluent complies with the limit set in Licence.
Small Streams Risk Score	Not Applicable	Effluent Discharge to Liffey Estuary.

5.1a 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.

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance	Desk Top Study and Screening Analysis
Does the assessment include a review of Trade inputs to the works?	Yes
Does the assessment include a review of other inputs to the works?	Yes
Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)	Yes
Does the assessment identify that priority substances may be impacting the receiving water?	No – only in the near field of the discharge.
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	Yes – reduction of all priority pollutants in licensed trade effluent discharges in the agglomeration.

5.1b Toxicity / Leachate Management

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

Is a Toxicity / Leachate Management Report required in the AER (or outstanding from previous AER)	Yes
What % of the total influent for the year is leachate?	**< 0.13 % of annual load (volume)**
Does leachate addition exceed 4% ((volume) of the influent load at any time?	No
Maximum leachate loading rate (based on 100 cubic metres)	**0.13 % of daily load (volume)**
Does the leachate study identify any constituents of the material that present an environmental risk?	No
List leachate constituent identified and impact (*insert a row for each constituent)*	Not Applicable
Has the WWTP suitability to treat the leachate been assessed?	No
What are the results of the assessment	Not Applicable
Has the study identified the max and operational loadings (mass, volume and rate of addition) for leachate to the WWTP?	Not Applicable
Is there a monitoring programme for the priority substances identified above?	Yes
Have trigger and action levels for the concentration of identified leachate constituents been established to prevent impact on the receiving water?	Yes
Does the Improvement Programme for the agglomeration include any procedural and/or infrastructural works to reduce the impacts of leachate acceptance on the operation of the WWTP?	No

5.1c Toxicity of the Final Effluent Assessment Summary

The Toxicity / Leachate Management Assessment report is included in **Appendix 7.4**. A summary of the findings of this report is included below.

Is a Toxicity report required? (Condition 4)	Yes
Has the study been carried out against 4 species in 3 trophic levels?	No (2 species) Fish toxicity carried out and reported in 2015.
Does the report identify that the discharge is toxic to any of the species in the study?	No
List species impacted	Not Applicable
Does the Improvement Programme for the agglomeration include any procedural and/or infrastructural works to reduce the toxicity of the final discharge?	No

Toxicity test results show effluent aquatic toxicity complies well with the licence limit of 5 TU.

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: 08/05/2019

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,

Eleanor Roche

Acting Head of Environmental Regulation.

7 APPENDIX

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

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

Appendix 7.1 - Ambient Monitoring Summary

Appendix 7.1.1 Dublin Ambient Sampling Points Map

Appendix 7.1.2 Transitional Monitoring Water Quality Data: ASW2 – ASW10

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

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

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

Figure 7.1.1 Dublin Ambient Sampling Points Map

Appendix 7.1.2 Transitional Water Body Monitoring (2018) ASW2 – ASW10

Customer	EPA Code	Test List	Sampling Point	Sampling Point Description	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Silica µg/l as SiO2	Temperature °C	TON µg/l as N	Total B.O.D. (Saline) mg/l
				Surface Water Objectives for Transitional Water Bodies - SI 272 of 2009														
				Compliant					High-Good		95%-ile							
				Non-Compliant				<4.0 mg/l 95%-ile	2.5-5 (median) Good-Moderate 5-10 (median)		0% PSU 70% - 130% 35% PSU 80% - 120%		0- 17% PSU < 60 ug/l P (median) 35% PSU <40 ug/l P (median)					<4.0 mg/l 95%-ile
DCC	ASW 2S	123_ESTUARY	130842	(130842) Liffey Estuary Lower, 25m North of Poolbeg Wall - Surface Sample	26/04/2018 10:10	1424871	6789	2	0.9	7091	93	0.7	219	19.63	2996	10.4	302	
					09/05/2018 10:45	1429723	490	3	6.8	677	94	1.2	118	21.66	371	11.9	187	
					21/06/2018 09:40	1448583	733		2	901	101	0.4	164	28.31	452	16.1	168	<1
					11/07/2018 08:51	1457567	1552		10.7	2495	101	4.9	817	23.86	1116	19.1	943	2
					08/08/2018 09:46	1468924	3432		1.5	4710	103	0.7	886	33.14	1439	17.8	1278	3
					06/09/2018 09:52	1481241	1756		1.1	2610	102	0.7	1076	32.51	1217	19	854	3
									1.75				**518**					
	ASW 2D	123_ESTUARY	130843	(130843) Liffey Estuary Lower, 25m North of Poolbeg Wall - Depth Sample	26/04/2018 10:10	1424872	431	<1	1.5	617	92	0.5	57	30.02	696	10.3	186	
					09/05/2018 10:48	1429724	382	3	6.9	558	93	1.6	82	29.56	300	11.7	176	
					21/06/2018 09:42	1448584	74		2.7	123	102	1.9	20	29.98	156	14.7	49	<1
					11/07/2018 08:53	1457568	72		5.3	121	96	11.1	64	33.33	<50	18.4	49	1
					08/08/2018 09:46	1468925	100		2	154	100	0.6	25	35.64	176	16.4	54	<1
					06/09/2018 09:53	1481242	78		2.5	78	100	1.5	<10	35.64	122	16.1	<40	<1
									2.6				**41**					
	ASW 3S	123_ESTUARY	130844	(130844) Liffey Estuary Lower, 50m North of Poolbeg Wall - Surface Sample	26/04/2018 09:55	1424873	6877	1	0.8	7263	93	0.8	217	17.94	2489	10.2	386	
					09/05/2018 11:02	1429725	492	5	6.4	695	93	1.7	168	23.06	443	12.1	203	
					21/06/2018 09:50	1448585	61		1.6	109	103	0.5	33	28.56	144	15.4	48	<1
					11/07/2018 09:12	1457569	17		11.2	163	103	6.4	56	31.26	<50	20	146	2
					08/08/2018 09:57	1468926	1906		1.6	2782	104	0.8	573	33.9	1007	17.7	876	2
					06/09/2018 09:46	1481243	79		2.8	134	102	1.4	<10	34.41	183	17	55	<1
									2.2				**112**					
	ASW 3D	123_ESTUARY	130845	(130845) Liffey Estuary Lower, 50m North of Poolbeg Wall - Depth Sample	26/04/2018 09:55	1424874	1912	<1	2.8	2197	92	1.2	92	29.56	1300	9.5	285	
					09/05/2018 11:04	1429726	493	4	7.1	676	92	1.8	124	22.31	358	12	183	
					21/06/2018 09:52	1448586	106		1.9	155	106	0.4	42	32.63	156	14.6	49	<1
					11/07/2018 09:14	1457570	<10		6.3	160	95	4	56	34.41	<50	17.5	160	1
					08/08/2018 09:57	1468927	96		1.6	96	95	0.6	15	35.91	156	16	<40	<1
					06/09/2018 09:07	1481244	74		2.4	74	97	1.1	<10	35.91	147	15.8	<40	<1
									2.6				**49**					
	ASW 4S	123_ESTUARY	130846	(130846) Liffey Estuary Lower, 75m North of Poolbeg Wall - Surface Sample	26/04/2018 10:37	1424875	2742	<1	0.9	3082	95	0.6	145	27.25	1695	9.9	340	
					09/05/2018 11:35	1429727	488	4	5.9	706	93	1.5	163	25.89	432	12.3	218	
					21/06/2018 09:35	1448587	72		6.4	142	100	1.5	42	28.79	210	15.2	70	<1
					11/07/2018 09:41	1457571	<10		4.3	148	103	5.7	57	26.38	<50	19.4	148	1
					08/08/2018 09:32	1468928	1675		1.5	2300	102	0.5	507	33.88	811	17	625	1
					06/09/2018 09:35	1481245	<10		3.3	47	104	1.3	<10	33.96	194	16.5	47	<1
									3.8				**101**					
	ASW 4D	123_ESTUARY	130847	(130847) Liffey Estuary Lower, 75m North of Poolbeg Wall - Depth Sample	26/04/2018 10:37	1424876	314	<1	1.2	510	94	0.3	54	28.88	692	9.1	196	
					09/05/2018 11:38	1429728	228	3	5.6	402	91	1.3	68	30.61	263	12.1	174	
					21/06/2018 09:37	1448588	73		1.6	73	108	0.7	31	32.23	145	14.6	<40	<1
					11/07/2018 09:43	1457572	14		4.3	163	94	2.5	55	34.07	<50	17.4	149	<1
					08/08/2018 09:32	1468929	93		1.6	134	94	0.5	31	35.1	168	16.1	41	<1
					06/09/2018 09:36	1481246	238		2.8	238	98	1	24	35.55	135	15.8	<40	<1
									2.2				**43**					
	ASW 5S	123_ESTUARY	130848	(130848) Liffey Estuary Lower, 100m North of Poolbeg Wall - Surface Sample	26/04/2018 10:20	1424877	98	<1	1.1	296	95	0.4	31	29.59	636	9.6	198	
					09/05/2018 10:35	1429729	2986	>6	6.4	3220	92	1.3	491	29.43	927	12.4	234	
					21/06/2018 09:25	1448589	93		1.5	140	101	0.6	45	28.99	159	14.5	47	<1
					11/07/2018 09:29	1457573	21		6.9	86	103	5.6	46	33.33	<50	18.4	65	1
					08/08/2018 09:25	1468930	120		2.5	180	104	<0.1	40	35.91	184	15.9	60	<1
					06/09/2018 09:26	1481247	80		3.3	125	104	1	<10	35.55	147	16	45	<1

									2.9				43											
ASW 5D	123_ESTUARY	130849	(130849) Liffey Estuary Lower, 100m North of Poolbeg Wall - Depth Sample	26/04/2018 10:20	1424878	262	<1		1.2	641	92	0.8	63	31.01	1213	9	379							
				09/05/2018 10:37	1429730	497		2	2	707	92	3.6	139	28.67	388	12.3	210							
				21/06/2018 09:27	1448590	100			1.6	100	104	0.9	42	32.27	154	14.4	<40	<1						
				11/07/2018 09:31	1457574	33			5.5	86	100	3.1	36	30.16	<50	17.6	53	<1						
				08/08/2018 09:25	1468938	96			1.6	136	102	0.4	31	36.17	167	16.1	40	<1						
				06/09/2018 09:27	1481248	75			1.9	75	98	1.2	12	35.82	118	15.7	<40	<1						
									1.8				39											
ASW 6S	123_ESTUARY	40063	(40063) Liffey City D/S Islandbdg Weir	11/04/2018 11:35	1418077	26		1	4.1	1871	99	2.4	21	0	3935	8.2	1845							
				26/04/2018 08:45	1424808	17		1	4.3	1542	98	2.4	14	0	4356	9.8	1525							
				10/05/2018 08:50	1430213	<10		1	5.1	2167	99	1.8	<10	0.1	1180	13.1	2167							
				21/06/2018 08:30	1448418	10			3.6	2066	98	8.1	19	0.3	2429	15.4	2056	2						
				11/07/2018 08:30	1457272	<10			21.8	2313	108	16.6	39	0.1	697	20.1	2313	<1						
				08/08/2018 08:10	1468739	28			5.7	2133	99	4.4	41	0.1	1703	16.5	2105	<1						
				06/09/2018 10:00	1481224	40			5.3	2146	93	2	<10	0	2076	15.1	2106	4						
									5.1				19											
ASW 7S	123_ESTUARY	40067	(40067) Liffey City Heuston Stn u/s Camac	11/04/2018 11:25	1418078	31	<1		4	1807	99	2	20	0	5084	8.5	1776							
				26/04/2018 09:00	1424809	17	<1		3.2	1533	99	1.9	14	0	4449	10	1516							
				10/05/2018 09:05	1430214	<10		2	4	2090	96	2.1	<10	0.2	1363	13	2090							
				21/06/2018 08:55	1448419	25			2.1	2006	94	3.1	24	2.1	2432	15.4	1981	<1						
				11/07/2018 08:40	1457273	<10			2.4	1907	94	1.7	37	4.3	1127	19.7	1907	<1						
				08/08/2018 08:30	1468740	22			2.3	2414	94	1.7	46	3.4	1967	16.5	2392	<1						
				06/09/2018 10:10	1481225	<10			3.5	1667	90	2	<10	1.3	2326	15.3	1667	2						
									3.2				20											
ASW 8S	123_ESTUARY	40072	(40072) Liffey City Winetav St Bridge	11/04/2018 11:15	1418079	25	<1		3.3	1565	98	2	18	0	4421	8.5	1540							
				26/04/2018 09:15	1424810	20	<1		2	1487	99	1.8	16	0.8	4363	9.8	1467							
				10/05/2018 09:25	1430215	<10		1	3.4	1758	97	2	13	3.4	1802	12.4	1758							
				21/06/2018 09:15	1448420	264			1.7	1701	99	3.3	72	10.9	1887	15	1437	2						
				11/07/2018 08:50	1457274	46			11.1	987	106	6.7	61	19.7	554	19.1	941	3						
				08/08/2018 08:45	1468741	54			2.1	2069	92	1.8	42	14.1	1516	15.2	2015	1						
				06/09/2018 10:30	1481226	15			4.3	1850	89	2.2	15	5.6	3292	15.7	1835	1						
									3.3				18											
ASW 9S	123_ESTUARY	40457	(40457) Liffey (S) D/S Toll Bridge	11/04/2018 11:00	1418080	47	<1		2.1	1414	97	1.7	20	3.4	4014	8.6	1367							
				26/04/2018 09:30	1424811	78	<1		1.5	818	99	1.5	34	18.7	2326	9.6	740							
				10/05/2018 10:05	1430216	67		2	4.5	799	104	1.5	37	23.3	713	11.9	732							
				21/06/2018 10:00	1448421	61			2.1	700	119	1.8	47	23.8	1112	14.6	639	1						
				11/07/2018 09:25	1457275	<10			5.2	1196	115	5.6	46	16.4	625	19.4	1196	2						
				08/08/2018 09:10	1468742	97			2.4	249	106	5.3	43	32.2	376	16.5	152	<1						
				06/09/2018 11:00	1481227	23			1.3	515	91	0.8	<10	23.7	1031	14.7	492	2						
									2.1				37											
ASW 10S	123_ESTUAR	45082	(45082) Tolka River D/S Annesley Bridge	11/04/2018 10:30	1418081	80		2	5	2563	97	2.6	14	0.1	6063	9	2483							
				26/04/2018 11:00	1424812	227		2	6.1	1994	114	3.3	48	0.6	2676	9.7	1767							
				10/05/2018 10:45	1430217	147		5	6.1	1759	115	6	47	0.2	2980	11.2	1612							
				21/06/2018 10:40	1448422	178			10.1	1385	135	11	91	1.4	2580	14.4	1207	2						
				11/07/2018 10:00	1457276	91			38.6	823	94	10.1	126	1.8	3467	17.7	732	4						
				08/08/2018 10:10	1468743	163			<0.1	1377	84	3.6	149	4.3	5217	16	1214	1						
				06/09/2018 11:10	1481228	33			15.2	2368	89	5.1	20	1.6	4340	14.7	2335	2						
									6.1				48											

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

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	Total B.O.D. (Saline) mg/l	
DCC				Surface Water Objectives for Transitional Water Bodies - SI 272 of 2009																				
				Compliant																				
				Non-Compliant																				
								<4.0 mg/l 95%-ile	High-Good 2.5-5 (median) Good-Moderate 5-10 (median)		High-Good 2.5-5 (median) Good-Moderate 5-10 (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)							<4.0 mg/l 95%-ile	
	DB 020	123_ESTUARY	130870	(130870) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Surface Sample	26/04/2018 08:20	1424879	67	<1			2	1425	91		1.3	15	21.5		4170		9.7	1358		
					09/05/2018 08:34	1429731	24	<1			2.5	1524	91		1.4	19	27.84		1183		10.9	1500		
					21/06/2018 07:57	1448591	99				3	1144	91		1.4	70	15.09		1812		14.4	1045		2
					11/07/2018 07:41	1457575	32				6.9	1365	102		4.1	54	13.83		673		18.7	1333		2
					08/08/2018 07:53	1468939	113				2.4	275	104		0.6	47	32.33		170		17.1	164	<1	
					06/09/2018 07:49	1481249	49				2	381	100		1.3	<10	33.48		561		15.9	312	<1	
											2.2					**33**								
	DB 020	123_ESTUARY	130871	(130871) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Depth Sample	26/04/2018 08:20	1424880	149	<1			1.9	522	86		1.3	57	29.56		1176		9.5	373		
					09/05/2018 08:36	1429732	164	<1			6.7	453	87		1.3	151	28.86		734		10.7	289		
					21/06/2018 07:59	1448592	215				3.7	287	96		1.7	121	26.54		517		15.2	72		1
					11/07/2018 07:43	1457576	334				5.9	418	100		14.3	160	29.18		405		19.3	84		2
					08/08/2018 07:53	1468940	145				1.9	214	97		2.2	50	33.63		314		17.1	66	<1	
					06/09/2018 07:51	1481250	102				2.1	148	95		1.3	<10	34.57		174		16.2	46	<1	
											2.9					**89**								
	DB 120	123_ESTUARY	130800	(130800) Liffey Estuary Lower, Dodder Grand Canal Basin- Surface Sample	26/04/2018 08:40	1424861	27	<1			4.4	1409	94		4.1	41	13.1		4851		9.7	1382		
					09/05/2018 08:55	1429713	26	<1			1.9	1346	94		1.4	19	13.02		2349		10.4	1320		
					21/06/2018 08:08	1448574	56				2.7	1095	87		5.8	43	18.67		6524		14.8	1039	<1	
					11/07/2018 08:01	1457551	51				4.9	1132	102		8.4	55	18.97		827		19.7	1081		3
					08/08/2018 08:07	1468915	169				0.3	538	102		2	60	32.28		679		17	369	<1	
					06/09/2018 08:03	1481232	88				2.1	303	101		1.3	<10	34.12		525		16	215	<1	
											2.4					**42**								
	DB 120	123_ESTUARY	130801	(130801) Liffey Estuary Lower, Dodder Grand Canal Basin- Depth Sample	26/04/2018 08:40	1424862	85	1			0.5	997	93		1.9	16	26.7		4843		9.6	912		
					09/05/2018 08:46	1429714	94	<1			4	634	93		1.2	39	27.04		961		10.1	540		
					21/06/2018 08:10	1448575	158				3.3	248	92		2.1	76	31		423		15.2	90	<1	
					11/07/2018 08:03	1457552	44				11.9	323	100		8.1	69	28.01		95		19	279		1
					08/08/2018 08:07	1468916	141				0.1	232	99		2.3	50	35.71		333		17.8	91	<1	
					06/09/2018 08:04	1481233	105				2	105	98		1.4	<10	35.28		113		16.3	<40	<1	
											2.8					**45**								
	DB 210	123_ESTUARY	130810	(130810) Liffey Estuary Lower, East Link Toll Bridge - Surface Sample	26/04/2018 08:50	1424863	71	<1			1.1	799	93		1.4	52	13.37		2607		9.5	728		
					09/05/2018 09:15	1429715	32	<1			1.3	1447	94		1.3	23	13.07		1051		12.2	1413		
					21/06/2018 08:22	1448576	161				3.2	233	95		<0.1	44	21.5		245		15	72	<1	
					11/07/2018 08:12	1457553	20				7.5	1191	102		4.7	53	16.95		613		19.1	1171	<1	
					08/08/2018 08:18	1468917	125				0.4	432	102		1.9	50	30.12		540		16.5	307	<1	
					06/09/2018 08:15	1481234	32				0.5	233	101		2.3	<10	31.38		455		16	203	<1	
											1.2					**51**								

										2.5					45							
DB 220	123_ESTUARY	130820	(130820) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - Surface Sampl	26/04/2018 09:11	1424865	74	<1			1.1	454	95		1.5	61	27.22		1185		9.5	380	
				09/05/2018 09:28	1429717	84	<1			3.9	568	95		0.9	36	32.24		506		12.9	484	
				21/06/2018 08:37	1448578	149				2.7	207	99		1.4	22	28.65		154		14.7	58	<1
				11/07/2018 08:28	1457555	18				10.3	163	104		5.8	56	27.36		<50		20.1	145	2
				08/08/2018 08:29	1468919	117				1.7	547	103		0.9	36	34.23		278		16.7	430	<1
				06/09/2018 08:24	1481236	83				2.5	156	101		1	<10	33.78		186		16.4	73	<1
										2.6					36							
DB 220	123_ESTUARY	130821	(130821) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - Depth Sample	26/04/2018 09:12	1424866	68	<1			1.2	333	90		0.7	58	29.72		830		8.9	265	
				09/05/2018 09:30	1429718	71	<1			6.4	283	93		1.1	33	31.32		248		12.5	212	
				21/06/2018 08:39	1448579	219				0.9	427	105		1.9	250	31.98		606		14.6	208	<1
				11/07/2018 08:30	1457556	<10				6.4	< 50	103		3.5	32	32.33		<50		18.6	<40	1
				08/08/2018 08:29	1468920	74				1.1	189	100		1.3	17	36.17		154		16.4	115	<1
				06/09/2018 08:25	1481237	103				3.3	103	98		1.3	<10	35.82		95		16	<40	<1
										2.2					33							
DB 410	123_ESTUARY	130830	(130830) Liffey Estuary Lower, Ringsend Cascade - Surface Sample	26/04/2018 10:50	1424867	2387	<1			0.7	2718	95		1	133	27.39		1485		10	331	
				09/05/2018 11:27	1429719	2652	>6			4.2	2909	95		2.5	480	27.15		872		14.1	257	
				21/06/2018 10:00	1448580	74				<0.1	74	101		3.3	23	27.98		156		15.9	<40	<1
				11/07/2018 09:00	1457563	4018				9.2	5441	104		3.1	1507	32.04		2442		19.5	1423	2
				08/08/2018 10:08	1468921	1016				3.7	1484	103		<0.1	322	35.54		592		17.4	468	<1
				06/09/2018 10:01	1481238	804				1.6	1523	104		1.4	431	33.32		1032		18.3	719	2
										2.7					377							
DB 410	123_ESTUARY	130831	(130831) Liffey Estuary Lower, Ringsend Cascade - Depth Sample	26/04/2018 10:50	1424868	173	<1			0.9	344	93		0.7	41	29.31		536		9.4	171	
				09/05/2018 11:29	1429720	99	<1			6.4	263	92		0.7	37	36.05		228		13.2	164	
				21/06/2018 10:02	1448581	195				6.7	195	99		16.9	52	32.51		143		14.6	<40	<1
				11/07/2018 09:02	1457564	47				2.5	47	96		2.6	29	34.07		<50		17.5	<40	<1
				08/08/2018 10:08	1468922	120				1.6	164	96		0.6	38	34.83		169		15.9	44	1
				06/09/2018 10:02	1481239	105				2.5	105	96		0.5	<10	35.73		158		15.8	<40	<1
										2.5					38							
DB 420	123_ESTUARY	130840	(130840) Liffey Estuary Lower, Poolbeg Lighthouse - Surface Sample	26/04/2018 11:15	1424869	241	<1			0.7	418	94		0.7	40	29.23		571		8.8	177	
				09/05/2018 11:48	1429721	<10	<1			10.5	54	93		2.3	15	29.09		81		12.3	54	
				11/07/2018 10:26	1457565	276				13.9	559	103		10.9	204	31.74		197		18.5	283	2
										10.7					40							
DB 420	123_ESTUARY	130841	(130841) Liffey Estuary Lower, Poolbeg Lighthouse - Depth Sample	26/04/2018 11:15	1424870	72	<1			4.4	206	93		<0.1	26	31.97		423		8.7	134	
				09/05/2018 11:51	1429722	<10	<1			10.3	48	90		2.2	12	31.32		79		12	48	
				11/07/2018 10:28	1457566	18				2.4	18	100		1.5	23	34.67		<50		17.2	<40	1
										4.4					23							
DB 420	123A_ESTUARY	130839	(130839) Liffey Estuary Lower, Poolbeg Lighthouse - Composite Sample	21/06/2018 10:09	1448582	187		100.1	14.6	0.3	187		106.1	2.3	48		32.71	139	15.1		<40	<1
				08/08/2018 10:22	1468923	111		100.2	15.9	1.7	166		104.2	0.7	37		35.6	177	16		55	<1
				06/09/2018 10:24	1481240	81		102.2	15.8	2.3	121		104.1	0.8	<10		35.91	148	15.8		40	<1
										1.7					37							
DB 300	123_ESTUARY	45076	(45076) Tolka River U/S Drumcondra Bridge	11/04/2018 10:20	1418082	45	1			6.4	2408	100		3	17	0.1		6122		9.1	2363	
				26/04/2018 11:15	1424813	19	3			24.8	1870	125		5.3	11	0		2840		10.3	1851	
				10/05/2018 11:05	1430218	<10	2			5.9	1644	106		3.8	11	0.1		3226		11.8	1644	
				21/06/2018 10:50	1448423	<10				7.2	1315	104		14.2	13	0.1		4262		15.5	1315	<1
				11/07/2018 10:20	1457277	50				13.5	1116	113		5.3	71	0.3		3112		17.9	1066	2
				08/08/2018 10:25	1468744	<10				2.5	955	110		3.4	56	0.1		474		15.5	955	<1
				06/09/2018 11:30	1481229	<10				25.8	660	95		10.4	<10	0		2021		14.8	660	4
										7.2					13							
DB 320	123_ESTUARY	130900	(130900) Tolka Estuary at East Point Business Park Bridge - Surface Sample	11/04/2018 10:40	1418083	69	1			3.3	2249	91		3.9	12	1.4		5849		8.7	2180	
				26/04/2018 10:25	1424814	136	<1			2.8	1289	96		2.4	37	14.8		1843		9.2	1153	
				10/05/2018 10:20	1430219	25	2			10.3	953	100		3.2	22	16.2		1577		11.4	928	
				21/06/2018 10:20	1448424	123				8	644	99		10	82	20.8		1557		15	521	2
				11/07/2018 09:35	1457278	119				22.5	290	92		13.2	207	26.5		1602		19.8	171	6
				08/08/2018 09:50	1468745	207				10.9	645	94		<0.1	122	24.6		1882		17.5	438	<1
				06/09/2018 11:40	1481230	14				13.6	298	80		5.7	<10	15.2		1369		15.3	284	6
										10.3					37							
DB 320	123_ESTUARY	130901	(130901) Tolka Estuary at East Point Business Park Bridge - Depth Sample	11/04/2018 10:50	1418084	65	2			6.8	2332	92		5.9	21	1.2		5901		8.8	2267	
				26/04/2018 10:15	1424815	168	<1			1.7	1128	96		2.5	41	18.2		1648		9.2	960	
				10/05/2018 10:30	1430220	91	1			4.3	1182	97		9.6	40	12.4		1887		11.6	1091	
				21/06/2018 10:30	1448425	130				7.2	705	100		6.8	85	21.3		1664		15.1	575	3
				11/07/2018 09:50	1457279	60				23.8	208	98		15.3	179	27		1414		20	148	6
				08/08/2018 10:00	1468746	207				1.9	872	91		5.2	131	17.8		3007		17	665	1
				06/09/2018 12:00	1481231	65				9.8	1079	82		3.9	96	16		3102		15.5	1014	2
										6.8					85							

DB 330	123_ESTUARY	130910 (130910) Tolka Estuary, Castle Ave. - Surface Sample	26/04/2018 09:23	1424881	116	<1			1.2	448	96		0.5	47	27.62		960		9.7	332	
			06/09/2018 08:58	1481251	448				2.8	799	101		1.9	86	33.68		1647		16.2	351	2
									2					67							
DB 330	123_ESTUARY	130911 (130911) Tolka Estuary, Castle Ave. - Depth Sample	26/04/2018 09:23	1424882	120	<1			1.7	430	94		<0.1	49	28.08		900		9.1	310	
			06/09/2018 09:00	1481252	60				2.9	120	100		1.1	41	33.96		214		16.4	60	<1
									2.3					45							
DB 330	123A_ESTUARY	130912 (130912) Tolka Estuary, Castle Ave. - Composite Sample	09/05/2018 09:50	1429733	246	<1	94.6	12.2	6.8	557		94.9	2.1	70		28.59	447	12.2		311	
			21/06/2018 09:03	1448593	159		97.8	14.4	2.8	295		97.8	1.1	69		32.15	383	14.4		136	<1
			11/07/2018 09:00	1457577	57		104.1	18.5	16.3	167		104.2	7.6	138		31.8	137	18.6		110	2
			08/08/2018 09:02	1468941	121		100.2	16.3	2.7	236		101.2	1.3	66		34	412	16.3		115	<1
									4.8					70							
DB 340	123_ESTUARY	130920 (130920) Tolka Estuary, Clontarf Boat Club - Surface Sample	08/08/2018 08:48	1468942	72				1.9	134	102		0.7	41	34.31		215		16.4	62	<1
									1.9					41							
DB 340	123_ESTUARY	130921 (130921) Tolka Estuary, Clontarf Boat Club - Depth Sample	08/08/2018 08:48	1468943	73				1.9	122	99		0.7	38	35.28		182		16.8	49	<1
									1.9					38							
DB 340	123A_ESTUARY	130922 (130922) Tolka Estuary, Clontarf Boat Club - Composite Sample	26/04/2018 09:45	1424883	89	<1	95.3	8.9	2.4	302		96.2	<0.1	36		27.84	675	9		213	
			09/05/2018 10:10	1429734	270	<1	94.7	11.9	5.6	519		95.5	1.3	79		28.61	326	12		249	
			21/06/2018 08:53	1448594	162		99.8	14.4	2.3	249		99.8	1	62		32.22	234	14.4		87	<1
			11/07/2018 09:53	1457578	14		103.9	18.2	5.6	14		104.5	8.9	47		34.14	<50	18.3		<40	2
			06/09/2018 08:49	1481253	12		100.7	16.1	2.9	12		101.2	1.1	12		34.21	77	16.1		<40	<1
									2.9					47							
DB 350	123_ESTUARY	130930 (130930) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Surface Sample	11/07/2018 10:12	1457579	100				8.7	223	104		21.1	134	31.61		57		19	123	2
									8.7					134							
DB 350	123_ESTUARY	130931 (130931) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Depth Sample	11/07/2018 10:14	1457580	28				2.8	96	103		19.9	87	32.92		<50		18.8	68	2
									2.8					87							
DB 350	123A_ESTUARY	130932 (130932) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Composite Sample	26/04/2018 09:30	1424884	135	<1	95	9.2	1.3	409		95.4	0.5	45		28.88	850	9.3		274	
			09/05/2018 10:15	1429735	475	1	95.9	12.3	5.6	761		96	1.2	158		29.87	441	12.3		286	
			21/06/2018 09:10	1448595	166		98.2	14.5	2	256		98.7	1	70		32.32	291	14.5		90	<1
			08/08/2018 09:16	1468944	217		102.1	16.4	3.2	375		102.4	1.3	133		35.19	384	16.4		158	2
			06/09/2018 09:11	1481254	111		101.1	16.1	2.7	202		101.2	1.1	82		35.19	288	16.1		91	<1
									2.7					82							

Appendix 7.1.4 Dublin Bay Water Monitoring Points Agreed By the EPA

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	Total B.O.D. (Saline) mg/l
				Surface Water Objectives for Transitional Water Bodies (SI 272 of 2009)					35% PSU 80%- 120%		HIGH / GOOD 2.5 ug/l median GOOD / MODERATE 5.0 ug/l median	HIGH STATUS < 170 ug/l N GOOD STATUS 0% PSU < 2600 ug/l N 34.5% PSU < 250 ug/l N		35% PSU 80%- 120%									
				Compliant																			
				Non-Compliant																			
DCC	DB 610	123A_ESTUARY	130602	(130602) Irish Sea Dublin, Bailey - Composite Sample	10/05/2018 08:08	1430350	<10	<1	100	9.6	4.4	102		101.5	1	17		32.02	133	10		102	
					20/06/2018 09:47	1447985	24		100.5	14.5	1.7	24		102.8	0.7	11		35.67	64	15		<40	<1
					12/07/2018 08:51	1458283	58		87.6	17	1.5	58		102.2	2.5	20		35.86	<50	17.1		<40	<1
					29/08/2018 09:01	1477671	37		101.3	15.1	1.3	37		102.2	0.5	26		34.82	219	15.1		<40	<1
											1.6 HIGH												
	DB 430	123A_ESTUARY	130702	(130702) Dublin Bay,1km NE Poolbeg Lighthouse - Composite Sample	10/05/2018 09:18	1430343	15	<1	100.2	9.8	5.2	104		100.5	0.8	17		33.38	109	10		89	
					20/06/2018 09:29	1447976	52		100	14.8	0.9	52		100.4	1.1	34		35	102	15.2		<40	1
					12/07/2018 08:00	1458273	11		97.6	16.9	2.9	11		101.7	2	19		36.12	<50	16.9		<40	<1
					29/08/2018 08:26	1477663	51		100.9	15.2	2.1	119		101.8	0.9	40		34.73	212	15.2		68	1
											1.5 HIGH												
	DB 450	123_ESTUARY	130710	(130710) Dublin Bay, South Bull Buoy, 1 km SE Pooolbeg Lighthouse - Surface S	20/06/2018 08:45	1447977	<10				1.1	<50		102	0.2	12	34.26		51		17.7	<40	<1
			130711	(130711) Dublin Bay, South Bull Buoy, 1 km SE Poolbeg Lighthouse - Depth Sam	20/06/2018 08:48	1447978	<10		102		1.1	<50			0.5	12	34.44		53			<40	<1
		123A_ESTUARY	130712	(130712) Dublin Bay, South Bull Bouy, 1km SE Poolbeg Lighthouse - Composite	10/05/2018 09:38	1430345	20	<1	100.1	9.8	3.7	106		101	0.4	18		33.61	136	10		86	
					12/07/2018 07:48	1458274	<10		100.1	16.9	2.1	< 50		103.1	2.1	15		35.99	<50	16.9		<40	<1
					29/08/2018 07:44	1477664	<10		100.1	15.1	1.5	< 50		101.1	0.8	23		34.73	181	15.1		<40	<1
											1.5 HIGH												
	DB 510*	123_ESTUARY	130720	(130720) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Surface Sample	12/07/2018 08:18	1458276	<10				5.1	< 50	100		1.4	20	35.63		59		17.1	<40		1
			130721	(130721) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Depth Sample	12/07/2018 08:20	1458277	<10				1.7	< 50	99		2.6	20	35.98		53		16.8	<40	<1	
		123A_ESTUARY	130722	(130722) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Composite Sample	10/05/2018 08:57	1430347	17	<1	101.7	9.8	4	108		103.3	1.3	21		33.55	139	10.1		91	
					20/06/2018 09:16	1447980	10		102	14.4	0.9	10		103.5	0.7	11		34	51	14.6		<40	1
					29/08/2018 08:12	1477666	40		101.4	15.2	1.7	93		101.9	0.7	31		34.91	211	15.2		53	1
											1.7 HIGH												
	DB 540*	123A_ESTUARY	130732	(130732) Dublin Bay, 2.5km SSE Poolbeg Lighthouse - Composite Sample	10/05/2018 09:50	1430346	14	<1	101.3	9.8	2.5	104		102.4	0.4	20		32.99	151	10.1		96	
					20/06/2018 09:03	1447981	<10		101.7	14.3	2.9	< 50		103.6	<0.1	12		34.5	54	14.7		<40	<1
					12/07/2018 07:55	1458278	12		97.2	16.9	2.5	12		104.1	0.5	23		35.87	56	16.9		<40	<1
					29/08/2018 07:55	1477667	14		102.2	15.1	1.5	14		103.7	0.6	17		34.82	155	15.1		<40	1
											2.5 HIGH												

											[illegible]											
DB 550	123A_ESTUARY	130742	(130742) Dublin Bay, No. 4 Bouy, 2.5km E of S Poolbeg Lighthouse - Composite	10/05/2018 10:25	1430344	14	<1	99.6	9.8	2.5	96		99.9	0.5	20		33.82	148	10.1		82	
				20/06/2018 07:50	1447979	<10		102.1	14.4	0.7	< 50		103.1	0.9	12		34.05	58	14.8		<40	1
				12/07/2018 07:31	1458275	21		100.2	16.8	0.7	21		102.7	3.4	29		35.63	50	16.9		<40	<1
				29/08/2018 07:31	1477665	16		101.9	15.1	1.5	16		102.2	0.5	21		34.55	195	15.1		<40	<1
											1.1 HIGH											
DB 560	123A_ESTUARY	130752	(130752) Dublin Bay, Drumleck Point, 5km ENE Poolbeg Lighthouse - Composit	10/05/2018 08:41	1430348	49	<1	99.9	9.9	4.5	147		101.4	1.1	24		31.95	123	10		98	
				20/06/2018 09:58	1447983	47		98.7	15.1	1.3	47		100.9	1.5	23		35.22	75	15.5		<40	1
				12/07/2018 08:41	1458281	82		99.1	17.1	4.3	82		102.9	1.2	37		35.65	118	17		<40	<1
				29/08/2018 08:41	1477669	38		101.1	15	2	38		101.5	0.9	24		34.96	156	15.2		<40	<1
											3.2 HIGH											
DB 570*	123A_ESTUARY	130762	(130762) Dublin Bay, 5km ESE Poolbeg Lighthouse - Composite Sample	10/05/2018 10:05	1430349	<10	<1	100.9	10	2.9	95		101.8	2	18		32.38	127	10.2		95	
				20/06/2018 10:01	1447984	<10		100.1	14.3	1.5	< 50		102.6	1.2	13		34.19	53	14.6		<40	1
				12/07/2018 09:10	1458282	12		93.1	17	1.5	12		100.7	1.1	28		36.08	71	17.1		<40	<1
				29/08/2018 09:26	1477670	27		103.4	15.1	1.3	27		103.9	0.9	23		35.27	212	15.1		<40	<1
											1.5 HIGH											
DB 580	123_ESTUARY	130770	(130770) Dublin Bay, Dún Laoghaire, 5km E of S Poolbeg Lighthouse - Surface S	12/07/2018 07:12	1458279	<10				1.1	< 50	103		3	24	33.62		60		16.9	<40	<1
		130771	(130771) Dublin Bay, Dún Laoghaire, 5km E of S Poolbeg Lighthouse - Depth Sa	12/07/2018 07:14	1458280	10				2	10	98		0.2	24	35.72		71		16.9	<40	<1
		130772	(130772) Dublin Bay, Dún Laoghaire, 5km E of S Poolbeg Lighthouse - Composit	10/05/2018 10:32	1430347	12	<1	101.4	9.8	2.9	96		102.6	0.4	20		33.96	152	10.1		84	
				20/06/2018 07:36	1447982	<10		100.2	14.3	1.9	< 50		101.9	<0.1	12		35.31	64	14.6		<40	<1
				29/08/2018 09:52	1477668	25		102.2	15.1	1.2	25		103.1	0.9	21		35.09	184	15.1		<40	<1
											1.9 HIGH											

Appendix 7.1.5 Bathing Water Monitoring

Report for Samples Taken During the Period: 01/01/2018 - 31/12/2018

DCC	EPA CODE	Test List	Sampling Point	Sampling Point Description	Sampled Date	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
	ASW 11	121_BEACH	40520	(40520) Dollymount North	23/05/2018 07:00	1435428	<10	<1		Absent	Absent	8.2	Absent	33.4	Absent	Normal
					05/06/2018 17:00	1441053	30		28	Absent	Absent	8.6	Absent	34.3	Absent	Normal
					11/06/2018 09:55	1443179	52		6	Ectocarpus Present	Absent	8.3	Absent	33.4	Absent	Ectocarpus present
					13/06/2018 11:00	1444465	30		4	Ectocarpus Present	Absent	8.3	Absent	33.9	Absent	Ectocarpus present
					17/06/2018 15:10	1445935	10		23	Ectocarpus Present	Absent	8.4	Absent	34.0	Absent	Ectocarpus present
					25/06/2018 11:55	1449964	30		2	Ectocarpus Present	Absent	8.5	Absent	33.6	Absent	Ectocarpus present
					01/07/2018 14:45	1452953	20		7	Ectocarpus Present	Absent	8.4	Absent	34.4	Absent	Ectocarpus Present
					11/07/2018 10:15	1457472	41		10	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus present
					15/07/2018 14:20	1459111	30		8	Ectocarpus Present	Absent	8.2	Absent	33.0	Absent	Ectocarpus present
					16/07/2018 15:10	1459552	<10		12	Ectocarpus Present	Absent	8.4	Absent	33.3	Absent	Ectocarpus present
					23/07/2018 09:40	1462126	<10		2	Ectocarpus Present	Absent	8.1	Absent	33.8	Absent	Ectocarpus Present
					30/07/2018 14:00	1465278	<10		5	Absent	Absent	8.2	Absent	32.7	Absent	Normal
					08/08/2018 09:40	1468859	399		53	Ectocarpus Present	Absent	8.1	Absent	34.1	Absent	Ectocarpus present
					13/08/2018 13:35	1470684	10		44	Ectocarpus Present	Absent	8.3	Absent	33.6	Absent	Ectocarpus present
					21/08/2018 09:30	1473862	10		28	Absent	Absent	8.2	Absent	33.8	Absent	Normal
					27/08/2018 13:30	1476410	86		15	Absent	Absent	8.4	Absent	33.2	Absent	Normal
					05/09/2018 08:00	1480371	85		12	Ectocarpus Present	Absent	8.2	Absent	34.0	Absent	Ectocarpus present
					09/09/2018 12:20	1482120	52		20	Ectocarpus Present	Absent	8.3	Absent	33.1	Absent	Ectocarpus present
					10/09/2018 13:15	1482354	75		30	Ectocarpus Present	Absent	8.3	Absent	33.5	Absent	Ectocarpus present
						Number	19		19							
*	ASW 12	121_BEACH	40526	(40526) Dollymount Bathing Zone	23/05/2018 07:15	1435429	<10		3	Absent	Absent	8.3	Absent	33.3	Absent	Normal
					05/06/2018 17:30	1441054	20		5	Absent	Absent	8.6	Absent	34.1	Absent	Normal
					11/06/2018 10:15	1443180	10		9	Ectocarpus Present	Absent	8.3	Absent	33.7	Absent	Ectocarpus present
					13/06/2018 11:20	1444466	10		1	Ectocarpus Present	Absent	8.3	Absent	33.7	Absent	Ectocarpus present
					17/06/2018 15:25	1445936	10		17	Ectocarpus Present	Absent	8.4	Absent	33.7	Absent	Ectocarpus present
					25/06/2018 12:10	1449965	<10	<1		Ectocarpus Present	Absent	8.5	Absent	33.6	Absent	Ectocarpus present
					01/07/2018 14:55	1452954	20		26	Ectocarpus Present	Absent	8.5	Absent	34.2	Absent	Ectocarpus Present
					11/07/2018 10:30	1457473	41		50	Ectocarpus Present	Absent	8.2	Absent	33.9	Absent	Ectocarpus present
					15/07/2018 14:40	1459112	20		12	Ectocarpus Present	Absent	8.2	Absent	33.3	Absent	Ectocarpus present
					16/07/2018 15:20	1459553	95		27	Ectocarpus Present	Absent	8.3	Absent	33.7	Absent	Ectocarpus present
					23/07/2018 10:00	1462127	10		3	Ectocarpus Present	Absent	8.2	Absent	34.1	Absent	Ectocarpus Present
					30/07/2018 14:20	1465279	10		16	Ectocarpus Present	Absent	8.2	Absent	33.6	Absent	Ectocarpus present
					08/08/2018 09:55	1468860	420		32	Ectocarpus Present	Absent	8.1	Absent	33.8	Absent	Ectocarpus present
					13/08/2018 13:50	1470685	218		450	Absent	Absent	8.4	Absent	33.8	Absent	Normal
					21/08/2018 09:40	1473863	52		20	Ectocarpus Present	Absent	8.2	Absent	33.6	Absent	Ectocarpus present
					27/08/2018 13:45	1476411	75		29	Absent	Absent	8.4	Absent	33.2	Absent	Normal
					05/09/2018 08:10	1480372	86		21	Ectocarpus Present	Absent	8.2	Absent	33.8	Absent	Ectocarpus present
					09/09/2018 12:30	1482121	41		23	Ectocarpus Present	Absent	8.3	Absent	33.2	Absent	Ectocarpus present
					10/09/2018 13:30	1482355	98		45	Ectocarpus Present	Absent	8.3	Absent	33.5	Absent	Ectocarpus present
						Number	19		19							

ASW 13	121_BEACH	40530	(40530) Dollymount South	23/05/2018 07:30	1435430	20		2	Absent	Absent	8.4	Absent	33.6	Absent	Normal
				05/06/2018 17:55	1441055	20		14	Absent	Absent	8.6	Absent	34.1	Absent	Normal
				11/06/2018 10:30	1443181	<10		2	Ectocarpus Present	Absent	8.4	Absent	33.1	Absent	Ectocarpus present
				13/06/2018 11:30	1444467	231		21	Ectocarpus Present	Absent	8.4	Absent	32.7	Absent	Ectocarpus present
				17/06/2018 15:55	1445937	<10	<1		Ectocarpus Present	Absent	8.3	Absent	34.0	Absent	Ectocarpus present
				25/06/2018 12:25	1449966	121		7	Ectocarpus Present	Absent	8.4	Absent	33.4	Absent	Ectocarpus present
				01/07/2018 15:30	1452955	31		11	Ectocarpus Present	Absent	8.4	Absent	34.3	Absent	Ectocarpus Present
				11/07/2018 10:40	1457474	75		20	Ectocarpus Present	Absent	8.2	Absent	34.0	Absent	Ectocarpus present
				15/07/2018 15:10	1459113	10		6	Absent	Absent	8.2	Absent	33.2	Absent	Normal
				16/07/2018 16:00	1459554	<10		4	Absent	Absent	8.2	Absent	33.4	Absent	Normal
				23/07/2018 10:35	1462128	41		40	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus Present
				30/07/2018 15:00	1465280	10		16	Ectocarpus Present	Absent	8.4	Absent	33.7	Absent	Ectocarpus present
				08/08/2018 10:25	1468861	31		7	Absent	Absent	8.1	Absent	33.7	Absent	Normal
				13/08/2018 14:25	1470686	20		21	Ectocarpus Present	Absent	8.2	Absent	33.7	Absent	Ectocarpus present
				21/08/2018 09:55	1473881	63		28	Ectocarpus Present	Absent	8.1	Absent	33.5	Absent	Ectocarpus present
				27/08/2018 14:20	1476412	63		23	Absent	Absent	8.1	Absent	33.5	Absent	Normal
				05/09/2018 08:50	1480373	275		63	Absent	Absent	8.2	Absent	34.1	Absent	Normal
				09/09/2018 12:50	1482122	10		20	Absent	Absent	8.1	Absent	34.0	Absent	Normal
				10/09/2018 13:55	1482358	331		29	Absent	Absent	8.1	Absent	33.4	Absent	Normal
					Number	19		19							
ASW 14	121_BEACH	40535	(40535) Bull Wall Wood Causeway	23/05/2018 07:45	1435431	4106		1400	Absent	Absent	8.0	Absent	31.1	Absent	Normal
				05/06/2018 18:20	1441056	20		7	Absent	Absent	8.3	Absent	32.3	Absent	Normal
				11/06/2018 10:45	1443102	62		7	Absent	Absent	8.2	Absent	31.9	Absent	Normal
				13/06/2018 11:40	1444468	275		23	Absent	Absent	8.3	Absent	31.8	Absent	Normal
				17/06/2018 16:30	1445938	<10		1	Ectocarpus Present	Absent	8.3	Absent	33.1	Absent	Ectocarpus present
				25/06/2018 12:40	1449967	135		12	Absent	Absent	8.2	Absent	32.3	Absent	Normal
				01/07/2018 16:00	1452956	<10		1	Absent	Absent	8.4	Absent	33.2	Absent	Normal
				11/07/2018 10:50	1457475	171		9	Absent	Absent	8.2	Absent	32.6	Absent	Normal
				15/07/2018 15:30	1459114	10		5	Absent	Absent	8.1	Absent	33.1	Absent	Normal
				16/07/2018 16:30	1459555	52		10	Absent	Absent	8.2	Absent	32.9	Absent	Normal
				23/07/2018 10:20	1462129	63		22	Absent	Absent	8.2	Absent	32.2	Absent	Normal
				30/07/2018 15:20	1465281	20		7	Ectocarpus Present	Absent	8.3	Absent	32.4	Absent	Ectocarpus present
				08/08/2018 10:45	1468862	183		64	Absent	Absent	8.1	Absent	32.6	Absent	Normal
				13/08/2018 13:45	1470687	41		5	Absent	Absent	8.1	Absent	33.1	Absent	Normal
				21/08/2018 10:05	1473885	135		43	Absent	Absent	8.0	Absent	32.1	Absent	Normal
				27/08/2018 14:50	1476413	121		36	Absent	Absent	8.1	Absent	33.1	Absent	Normal
				05/09/2018 09:10	1480374	223		30	Absent	Absent	8.0	Absent	32.0	Absent	Normal
				09/09/2018 13:00	1482123	96		15	Absent	Absent	8.1	Absent	32.9	Absent	Normal
				10/09/2018 14:10	1482357	63		23	Absent	Absent	8.1	Absent	33.2	Absent	Normal
					Number	19		19							

ASW 15	**121_BEACH**	**40538**	**(40538) Poolbeg Outfall Main Discharge**	23/05/2018	07:00	1435432		24196		>2000	Absent	Absent	7.8	Absent	26.4	Absent	Normal
				05/06/2018	16:05	1441046		12033		>2000	Absent	Absent	7.6	Absent	21.3	Absent	Normal
				11/06/2018	11:20	1443183		14136		>2000	Absent	Absent	7.6	Absent	21.4	Absent	Normal
				13/06/2018	12:00	1444469		771		980	Absent	Absent	8.1	Absent	31.3	Absent	Normal
				17/06/2018	14:30	1445947		3654		910	Absent	Absent	7.9	Absent	28.0	Absent	Normal
				25/06/2018	10:55	1449968		7701		890	Absent	Absent	7.6	Absent	20.4	Absent	Normal
				01/07/2018	12:45	1452957		8664		940	Absent	Absent	7.6	Absent	15.4	Absent	Normal
				11/07/2018	11:15	1457476		6867		1050	Absent	Absent	7.7	Absent	20.9	Absent	Normal
				15/07/2018	13:40	1459115		1376		310	Absent	Absent	7.8	Absent	26.6	Absent	Normal
				16/07/2018	15:00	1459556		471		110	Absent	Absent	8.0	Absent	32.1	Absent	Normal
				23/07/2018	10:55	1462130		882		200	Absent	Absent	8.0	Absent	29.9	Absent	Normal
				30/07/2018	14:00	1465282		97		800	Absent	Absent	8.1	Absent	32.3	Absent	Normal
				08/08/2018	11:10	1468863		9208		830	Absent	Absent	7.8	Absent	26.3	Absent	Normal
				13/08/2018	13:55	1470688		4352		530	Absent	Absent	7.9	Absent	27.7	Absent	Normal
				21/08/2018	10:35	1473866		1529		290	Absent	Absent	7.8	Absent	27.2	Absent	Normal
				27/08/2018	14:25	1476414		1467		430	Absent	Absent	7.9	Absent	27.9	Absent	Normal
				05/09/2018	07:30	1480375		932		210	Absent	Absent	7.8	Absent	28.5	Absent	Normal
				09/09/2018	11:30	1481958		259		55	Absent	Absent	8.0	Absent	32.7	Absent	Normal
				10/09/2018	13:10	1482358		683		117	Absent	Absent	8.0	Absent	32.9	Absent	Normal
							Number	**19**				**19**				
ASW 16	**121_BEACH**	**40540**	**(40540) Half Moon Club S-Side Wall**	23/05/2018	07:15	1435433		148		44	Absent	Absent	8.2	Absent	34.0	Absent	Normal
				05/06/2018	06:20	1441047		<10		4	Absent	Absent	8.2	Absent	33.9	Absent	Normal
				11/06/2018	11:35	1443184		241		42	Absent	Absent	8.3	Absent	33.5	Absent	Normal
				13/06/2018	12:20	1444470		<10		7	Absent	Absent	8.3	Absent	33.7	Absent	Normal
				17/06/2018	14:55	1445948		20		88	Absent	Absent	8.2	Absent	33.6	Absent	Normal
				25/06/2018	11:15	1449969		173		480	Absent	Absent	8.2	Absent	34.5	Absent	Normal
				01/07/2018	13:00	1452958		345		20	Absent	Absent	8.2	Absent	33.8	Absent	Normal
				11/07/2018	11:25	1457477		41		8	Absent	Absent	8.1	Absent	33.1	Absent	Normal
				15/07/2018	14:00	1459116		20	<1		Absent	Absent	8.1	Absent	33.7	Absent	Normal
				16/07/2018	15:30	1459557		20		3	Absent	Absent	8.2	Absent	33.8	Absent	Normal
				23/07/2018	11:30	1462131		10		4	Absent	Absent	8.1	Absent	33.1	Absent	Normal
				30/07/2018	14:30	1465283		<10		5	Absent	Absent	8.2	Absent	33.5	Absent	Normal
				08/08/2018	11:50	1468864		75		5	Absent	Absent	8.2	Absent	34.2	Absent	Normal
				13/08/2018	14:10	1470689		144		16	Absent	Absent	8.1	Absent	33.5	Absent	Normal
				21/08/2018	10:50	1473867		20		5	Absent	Absent	8.0	Absent	33.4	Absent	Normal
				27/08/2018	14:45	1476415		86		7	Absent	Absent	8.1	Absent	33.3	Absent	Normal

					05/09/2018	08:00	1480376		<10		2	Absent	Absent	8.0	Absent	33.5	Absent	Normal
					09/09/2018	11:50	1481959		880		91	Absent	Absent	8.1	Absent	33.6	Absent	Normal
					10/09/2018	13:25	1482359		110		20	Absent	Absent	8.1	Absent	33.7	Absent	Normal
								Number	**19**		**19**									
*	**ASW 17**	**121_BEACH**	**40545**	**(40545) Sandymount**	23/05/2018	07:50	1435434		10		20	Absent	Absent	8.2	Absent	34.2	Absent	Normal
					05/06/2018	16:50	1441048		10	<1		Absent	Absent	8.3	Absent	34.9	Absent	Normal
					11/06/2018	11:55	1443185		20		22	Absent	Absent	8.3	Absent	33.6	Absent	Normal
					13/06/2018	13:20	1444471		52		10	Absent	Absent	8.2	Absent	34.1	Absent	Normal
					17/06/2018	15:30	1445949		<10		7	Absent	Absent	8.1	Absent	33.6	Absent	Normal
					25/06/2018	10:40	1449970		31		2	Absent	Absent	8.0	Absent	35.9	Absent	Normal
					01/07/2018	13:50	1452959		<10		1	Absent	Absent	8.2	Absent	35.5	Absent	Normal
					11/07/2018	11:45	1457478		41		5	Absent	Absent	8.2	Absent	35.8	Absent	Normal
					15/07/2018	14:35	1459117		31		22	Absent	Absent	8.1	Absent	33.9	Absent	Normal
					16/07/2018	16:10	1459558		31		2	Absent	Absent	8.2	Absent	33.6	Absent	Normal
					23/07/2018	11:45	1462132		107		37	Absent	Absent	8.1	Absent	34.5	Absent	Normal
					30/07/2018	15:00	1465284		31		6	Ectocarpus Present	Absent	8.2	Absent	32.4	Absent	Ectocarpus present
					08/08/2018	12:10	1468865		30		30	Absent	Absent	8.4	Absent	34.8	Absent	Normal
					13/08/2018	14:25	1470690		189		170	Ectocarpus Present	Absent	8.2	Absent	35.0	Absent	Ectocarpus present
					21/08/2018	11:15	1473868		161		27	Absent	Absent	8.1	Absent	33.7	Absent	Normal
					27/08/2018	13:30	1476416		97		12	Absent	Absent	8.2	Absent	32.4	Absent	Normal
					05/09/2018	08:30	1480377		663		66	Absent	Absent	8.1	Absent	34.8	Absent	Normal
					09/09/2018	12:20	1481960		520		430	Absent	Absent	8.1	Absent	33.7	Absent	Normal
					10/09/2018	13:55	1482360		41		41	Absent	Absent	8.1	Absent	33.7	Absent	Normal
								Number	**19**		**19**									
*	**ASW 18**	**121_BEACH**	**40550**	**(40550) Merrion Strand**	23/05/2018	08:10	1435435		41		5	Absent	Absent	8.3	Absent	33.7	Absent	Normal
					05/06/2018	17:10	1441049		30		2	Absent	Absent	8.3	Absent	34.7	Absent	Normal
					11/06/2018	12:05	1443186		20		4	Absent	Absent	8.3	Absent	35.5	Absent	Normal
					13/06/2018	13:30	1444472		52		20	Absent	Absent	8.3	Absent	34.6	Absent	Normal
					17/06/2018	15:45	1445950		<10		3	Absent	Absent	8.3	Absent	32.1	Absent	Normal
					25/06/2018	10:30	1449971		20		5	Absent	Absent	8.1	Absent	34.8	Absent	Normal
					01/07/2018	14:15	1452960		<10	<1		Absent	Absent	8.2	Absent	35.5	Absent	Normal
					11/07/2018	12:00	1457479		41		15	Absent	Absent	8.2	Absent	35.4	Absent	Normal
					15/07/2018	14:50	1459118		31		43	Absent	Absent	8.2	Absent	33.4	Absent	Normal
					16/07/2018	16:30	1459559		31		9	Absent	Absent	8.2	Absent	34.0	Absent	Normal
					23/07/2018	12:00	1462133		404		118	Absent	Absent	8.1	Absent	33.6	Absent	Normal
					30/07/2018	15:30	1465285		187		45	Absent	Absent	8.2	Absent	32.7	Absent	Normal
					08/08/2018	12:20	1468866		315		122	Absent	Absent	9.0	Absent	33.5	Absent	Normal
					13/08/2018	14:35	1470691		359		560	Ectocarpus Present	Absent	8.2	Absent	34.0	Absent	Ectocarpus present
					21/08/2018	11:40	1473869		63		22	Absent	Absent	8.1	Absent	33.9	Absent	Normal
					27/08/2018	13:45	1476417		121		98	Absent	Absent	8.1	Absent	32.6	Absent	Normal
					05/09/2018	09:00	1480378		75		41	Absent	Absent	8.2	Absent	34.8	Absent	Normal
					09/09/2018	12:35	1481961		75		26	Absent	Absent	8.2	Absent	33.7	Absent	Normal
					10/09/2018	14:20	1482361		855		340	Absent	Absent	8.2	Absent	33.2	Absent	Normal
								Number	**19**		**19**									

Appendix 7.2 – Priority Substance Assessment

Table 7.2.1: Screening of Effluent

Table 7.2.2: Impact on Receiving Waters

Table 7.2.3: Screening of Influent

Table 7.2.4: Screening of Influent Lines to Ringsend WWTP

Ringsend Influent and Effluent Priority Substances Screening, 2018.

To comply with condition **4.11.1** of Licence D0034-01, 2 sub-samples of the Ringsend composite influent and effluent were analysed in 2018 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 Effluent Screening Results:

Effluent Sample Reference 1514217 taken 29/11/18.

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 included:

A low concentration of the VOC Toluene (0.1 ug/l).

Low concentrations (microgram and sub-microgram per litre) of the herbicides Glyphosate (1.8 ug/l), Mecoprop (0.07 ug/l) and Diazinon (0.007 ug/l).

Microgram per litre concentrations of the metals Arsenic (2.2 ug/l), Copper (25.ug/l), Zinc (70.0 ug/l), Selenium (1.4ug/l), Antimony (1.6 ug/l) and Barium (26.4 ug/l).

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

See highlighted parameters in **Table 7.2.1**.

Table 7.2.1. EPA Appendix 1 – Ringsend Effluent Sample 1514217 - 2018 Screening

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	<0.10 ug/l	**VOC's**
2.	Carbon Tetrachloride	< 1.0 ug/l	
3	1,2-Dichloroethane	< 1.0 ug/l	
4	Dichloromethane	< 1.0 ug/l	
5	Tetrachloroethylene	< 1.0 ug/l	
6	Trichloroethylene	< 1.0 ug/l	
7	Trichlorobenzene	< 1.0 ug/l	(1,2,4)
8	Trichloromethane	< 1.0 ug/l	
9	Xylenes (all isomers)	< 0.30 ug/l	
10	Ethyl Benzene	< 0.10 ug/l	
11	Toluene	**0.1 ug/l**	
12	Naphthalene	< 0.02 ug/l	**PAH's**
13	Fluoranthene	< 0.02 ug/l	
14	Benzo(k)fluoranthene	< 0.02 ug/l	
15	Benzo(ghi)perylene	< 0.02 ug/l	
16	Indeno(1,2,3-c,d)pyrene	< 0.02 ug/l	
17	Benzo(b)fluoranthene	< 0.02 ug/l	
18	Benzo(a)pyrene	< 0.02 ug/l	
	Acenaphthene	< 0.02 ug/l	
	Pyrene	< 0.02 ug/l	
	Anthracene	< 0.02 ug/l	
	Fluorene	< 0.02 ug/l	
	Phenanthrene	< 0.02 ug/l	
	Benz(a)anthracene	< 0.02 ug/l	
		< 026 ug/l	**Total PAH's**
19	Di(2-ethylhexyl)phthalate (DEHP)	< 5.0 ug/l	**Plasticisers**
	Diethyl Phthalate	< 1.0 ug/l	
20	Isodrin	< 4 ng/l	**Pesticides**
21	Dieldrin	< 4 ng/l	
22	Diuron	< 0.20 ug/l	
23	Isoproturon	< 0.20 ug/l	
24	Atrazine	< 0.02 ug/l	

No.	Compound	Result	Group of Compounds
25	Simazine	< 0.02 ug/l	
26	Glyphosate	**1.8 ug/l**	
27	Mecoprop	**0.07 ug/l**	
28	2,4-D	< 0.05 ug/l	
29	MCPA	< 0.05 ug/l	
30	Linuron	< 0.20 ug/l	
31	Dichlobenil	< 2 ng/l	
32	2,6-Dichlorobenzamide	N/A*	
	Diazinon	**0.007 ug/l**	
33	PCB's (Sum of 7)	< 16 ng/l	**PCB's**
34	Phenols	< 1.5 ug/l	**Phenols**
	m,p- Methylphenol	< 0.3 ug/l	**Cresols**
	o- Methylphenol	< 1.0 ug/l	
35	Lead (Total as Pb)	< 6 ug/l	**Metals**
36	Arsenic (Total as As))	**2.2 ug/l**	
37	Copper (Total as Cu)	**25.0 ug/l**	
38	Zinc (Total as Zn)	**70 ug/l**	
39	Cadmium (Total as Cd)	< 0.60 ug/l	
40	Mercury (Total as Hg)	< 0.2 ug/l	
41	Chromium (Total as Cr)	< 2.0 ug/l	
42	Selenium (Total as Se)	**1.4 ug/l**	
43	Antimony (Total as Sb)	**1.6 ug/l**	
44	Molybdenum (Total as Mo)	<3.00 ug/l	
45	Tin (Total as Sn)	<7.00 ug/l	
	Organo-Tin	<0.06 ug/l	
46	Barium (Total as Ba)	**26.4 ug/l**	
47	Boron (Total as B)	<0.23 mg/l	
48	Cobalt (Total as Co)	<2.00 ug/l	
49	Vanadium (Total as V)	<4.00 ug/l	
50	Nickel (Total as Ni)	<3.0 ug/l	
51	Fluoride (as F)	0.4 mg/l	**General**
52	Chloride (as Cl)	387 mg/l	
53	TOC (as C)	-	

No.	Compound	Result	Group of Compounds
54	Cyanide (Total as CN)	< 9 ug/l	
55	Conductivity	1644 uS/cm (20 degrees C)	**Additional Tests (Sample 1514207)**
56	Hardness (mg/l CaCO3)	N/A	
57	pH	7.5	

Assessment of the Significance of the Discharge SW1 on Receiving Water Quality – 2018

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 effluent results are at the licensed point of discharge (SW1) and that a mixing zone boundary has not been defined in WWDL D0034-01.
Effluent from SW1 receives a significant dilution within the undefined near field mixing zone before receiving water standards are applicable.

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 and Linuron was reported at less than the detection limit (< 2.0 ug/l). A minimum dilution factor of 2-5 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 on 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 (ug/l) 1514217 29/11/18
		SW1
Arsenic	20	2.2
Chromium VI	0.6	< 2.0
Copper	5	**25.0**
Cyanide	10	< 9
Diazinon	0.01	0.007
Dimethoate	0.8	< 0.020
Fluoride	1,500	400
Glyphosate	-	1.8

Specific Pollutant Parameter	AA-EQS (ug/l)	Effluent (ug/l) 1514217 29/11/18
Linuron	0.7	< 0.20
Mancozeb	2	-
Monochlorobenzene	25	< 1.0
Phenols	8	< 1.5
Toluene	10	0.1
Xylenes	10	< 0.30
Zinc	40	**70.0**

* = Total Chromium which is > Chromium VI

Ringsend Influent Screening, 2018

To comply with condition **4.11.2 of Licence D0034-01**, a sub-sample of the Ringsend composite influent was analysed during 2018 (on the same date – 29/11/18 - 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 the same date (29/11/18).
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:

2018 – Influent Sample Reference 1514216 of 29/11/18.

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 levels (microgram and sub-microgram per litre) of Trichloromethane (2.64 ug/l), Xylenes (0.44 ug/l) and Toluene (0.76 ug/l).
- No PAH results were reported due to analytical interference.
- The plasticiser Diethyl Phthalate was detected (1.7 ug/l).
- The herbicide Glyphosate was detected (2.2 ug/l).

- Phenol (38 ug/l) and m,p-Methylphenol (126 ug/l) were detected.

- The metals Arsenic (2.2 ug/l), Copper (46 ug/l), Zinc (90 ug/l), Chromium (4 ug/l), Antimony (1.6 ug/l), Molybdenum (4.0 ug/l), Barium (33.3 ug/l) and Nickel (5 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 1514216 – 2018 PRTR Screening

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	< 0.10 ug/l	**VOC's**
2.	Carbon Tetrachloride	< 1.0 ug/l	
3	1,2-Dichloroethane	< 1.0 ug/l	
4	Dichloromethane	< 1.0 ug/l	
5	Tetrachloroethylene	< 1.0 ug/l	
6	Trichloroethylene	< 1.0 ug/l	
7	Trichlorobenzene	< 1.0 ug/l	(1,2,4)
8	Trichloromethane	**2.64 ug/l**	
9	Xylenes (all isomers)	**0.44 ug/l**	
10	Ethyl Benzene	< 0.10 ug/l	
11	Toluene	**0.76 ug/l**	
12	Naphthalene	N/A	**PAH's***
13	Fluoranthene	N/A	N/A due to interferences
14	Benzo(k)fluoranthene	N/A	
15	Benzo(ghi)perylene	N/A	
16	Indeno(1,2,3-c,d)pyrene	N/A	
17	Benzo(b)fluoranthene	N/A	
18	Benzo(a)pyrene	N/A	
	Acenaphthene	N/A	
	Pyrene	N/A	
	Anthracene	N/A	

No.	Compound	Result	Group of Compounds
	Fluorene	N/A	
	Phenanthrene	N/A	
		N/A	**Total PAH's**
19	Di(2-ethylhexyl)phthalate (DEHP)	< 5.0 ug/l	**Plasticisers**
	Diethyl Phthalate	**1.7 ug/l**	
20	Isodrin	< 1233 ng/l	**Pesticides**
21	Dieldrin	< 1071 ng/l	
22	Diuron	< 0.2 ug/l	
23	Isoproturon	< 0.2 ug/l	
24	Atrazine	< 4.292 ug/l	
25	Simazine	< 5.348 ug/l	
26	Glyphosate	**2.2 ug/l**	
27	Mecoprop	< 0.16 ug/l	
28	2,4-D	< 0.20 ug/l	
29	MCPA	< 0.20 ug/l	
30	Linuron	< 0.20 ug/l	
31	Dichlobenil	< 821 ng/l	
32	2,6-Dichlorobenzamide	N/A	
	Diazinon	< 1.082 ug/l	
33	PCB's (Sum of 7)	< 6409 ng/l	**PCB's**
34	Phenols	**38 ug/l**	**Phenols**
	m,p- Methylphenol	**126 ug/l**	**Cresols**
	o- Methylphenol	< 1.0 ug/l	
35	Lead (Total as Pb)	< 6 ug/l	**Metals**
36	Arsenic (Total as As)	**2.2 ug/l**	
37	Copper (Total as Cu)	**46 ug/l**	
38	Zinc (Total as Zn)	**90 ug/l**	
39	Cadmium (Total as Cd)	< 0.6 ug/l	
40	Mercury (Total as Hg)	< 0.20 ug/l	
41	Chromium (Total as Cr)	**4 ug/l**	
42	Selenium (Total as Se)	**<0.80 ug/l**	
43	Antimony (Total as Sb)	**1.6 ug/l**	
44	Molybdenum (Total as Mo)	**4.0 ug/l**	

No.	Compound	Result	Group of Compounds
45	Tin (Total as Sn))	< 7.0 ug/l	
46	Barium (Total as Ba)	**33.3 ug/l**	
47	Boron (Total as B)	< 0.23 mg/l	
48	Cobalt (Total as Co)	< 2.00 ug/l	
49	Vanadium (Total as V)	< 4.00 ug/l	
50	Nickel (Total as Ni)	**5 ug/l**	
51	Fluoride (as F)	0.4 mg/l	**General**
52	Chloride	370 mg/l	
53	TOC	-	
54	Cyanide	< 9 ug/l	
55	Conductivity	1,595 uS/cm (20 degrees C)	**Additional Tests (Sample 1514205)**
56	Hardness (mg/l CaCO3)	N/A	
57	pH	7.5	

Summary of Influent Lines Screening Results:

2018 – Influent Lines - Sample References 1514431, 1514430, 1514432 and 1514218 of 29/11/2018

To isolate the source of parameters detected in the Influent, samples were taken from the 4 main influent feeder lines on 29/11/2018 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 taken on the same date (see **Table 7.2.3** above).

1514431: Dun Laoghaire – West Pier

1 parameter detected in this sample was Toluene (0.13 ug/l).

The plasticizer di-ethyl phthalate was detected at 3.3 ug/l.

Phenol was detected at 65.1 ug/l and m,p- Methyl Phenol at 118 ug/l.

The metals Lead (14 ug/l), Arsenic (2.6 ug/l), Copper (38 ug/l), Zinc (136 ug/l), Chromium (2.0 ug/l), Selenium (1.6 ug/l), Molybdenum (11 ug/l), Barium (33.5 ug/l) and Nickel (11 ug/l) were detected.

See highlighted parameters in **Table 7.2.4.**

1514330: Dodder Valley Sewer - UCD FM-10

Parameters detected in this sample included Tri-chloromethane (1.71 ug/l) and Toluene (0.21 ug/l).

The plasticizer di-ethyl phthalate was detected at 2.3 ug/l.

Phenol (155 ug/l) and m,p-Methyl Phenol (233 ug/l) were detected in this sample.

The metals Arsenic (2.2 ug/l), Copper (16 ug/l), Zinc (50 ug/l), Selenium (1.76 ug/l) and Barium (17.1 ug/l) were detected.

See highlighted parameters in **Table 7.2.4**.

1514332: North Dublin Drainage System – Sutton Sump

Parameters detected in this sample included Xylenes (1.18 ug/l), Ethyl Benzene (0.20 ug/l) and Toluene (1.57 ug/l)

Naphthalene was detected at 0.096 ug/l in this sample.

The plasticizer di-ethyl phthalate was detected at 3.6 ug/l.

Glyphosate was detected (0.9 ug/l)

Phenol was detected (38.5 ug/l) with m,p- Methyl Phenol (70 ug/l).

The metals Lead (18 ug/l), Arsenic (2.6 ug/l), Copper (183 ug/l), Zinc (507 ug/l), Chromium (4.0 ug/l), Selenium (0.98 ug/l), Antimony (1.3 ug/l), Molybdenum (3 ug/l), Tin (12 ug/l), Barium (41.2 ug/l) and Nickel (19 ug/l) were detected in this sample.

See highlighted parameters in **Table 7.2.4.**

1514218: Ringsend – Main Lift Pumping Station

Parameters detected in this sample included Tetrachloroethylene (3.23 ug/l), Trichloromethane (1.22 ug/l), Xylenes (1.21 ug/l) and Toluene (0.46 ug/l).

PAH's could not be analysed due to interferences.

No plasticizers were detected in this sample.

The herbicide Glyphosate was detected at 2.7 ug/l.

Phenol (55.2 ug/l) and m,p-Methylphenol (268 ug/l) were detected in this sample.

The metals Lead (8.0 ug/l), Arsenic (2.2 ug/l), Copper (92 ug/l), Zinc (145 ug/l), Chromium (5.0 ug/l), Antimony (1.7 ug/l), Molybdenum (11.0 ug/l), Tin (9.0 ug/l), Barium (44.1 ug/l) and Nickel (5 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 will be 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 - 2018 PRTR Screening

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

No.	Compound	1514431 Dun Laoire West Pier	1514430 UCD FM 10 (Dodder)	1514432 Sutton Sump	1514218 Ringsend Main Lift
1.	Benzene	<0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
2.	Carbon Tetrachloride	<1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
3	1,2-Dichloroethane	<1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
4	Dichloromethane	<1.0 ug/l	< 1.0 ug/l	<1.0 ug/l	< 1.0 ug/l
5	Tetrachloroethylene	<1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	**3.23 ug/l**
6	Trichloroethylene	<1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
7	Trichlorobenzene (1,2,4)	<2.0 ug/l	< 2.0 ug/l	< 4.0 ug/l	< 2.0 ug/l
8	Trichloromethane	<1.0 ug/l	**1.71 ug/l**	< 1.0 ug/l	**1.22 ug/l**
9	Xylenes (all isomers)	<0.30 ug/l	< 0.36 ug/l	**1.18 ug/l**	< 0.35 ug/l
10	Ethyl Benzene	<0.10 ug/l	< 0.10 ug/l	**0.21 ug/l**	< 0.10 ug/l
11	Toluene	**0.13 ug/l**	**0.21 ug/l**	**1.57 ug/l**	**0.46 ug/l**
12	Naphthalene	<0.04 ug/l	<0.10 ug/l	**0.096 ug/l**	N/A
13	Fluoranthene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
14	Benzo(k)fluoranthene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
15	Benzo(ghi)perylene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
16	Indeno(1,2,3-c,d)pyrene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
17	Benzo(b)fluoranthene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
18	Benzo(a)pyrene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
	Acenaphthene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
	Pyrene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
	Anthracene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
	Fluorene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
	Phenanthrene	<0.04 ug/l	<0.10 ug/l	<0.04 ug/l	N/A
	Total PAH's	<0.48 ug/l	<1.20 ug/l	<0.54 ug/l	N/A
19	Di(2-ethylhexyl)phthalate (DEHP)	<10 ug/l	< 10 ug/l	< 5.0 ug/l	< 10 ug/l
	Di-ethylphthalate	**3.3 ug/l**	**2.3 ug/l**	**3.6 ug/l**	< 2.0 ug/l
20	Isodrin	< 4 ng/l	<247 ng/l	< 4 ng/l	< 6 ng/l
21	Dieldrin	< 4 ng/l	<215 ng/l	< 4 ng/l	< 5 ng/l
22	Diuron	< 0.5 ug/l	< 0.33 ug/l	< 0.2 ug/l	< 0.20 ug/l

No.	Compound	1514431 Dun Laoire West Pier	1514430 UCD FM 10 (Dodder)	1514432 Sutton Sump	1514218 Ringsend Main Lift
23	Isoproturon	< 0.5 ug/l	< 0.65 ug/l	< 0.2 ug/l	< 0.20 ug/l
24	Atrazine	<0.02 ug/l	< 0.86 ug/l	< 0.02 ug/l	**<** 0.04 ug/l
25	Simazine	<0.02 ug/l	< 1.07 ug/l	< 0.02 ug/l	< 0.022 ug/l
26	Glyphosate	<0.1 ug/l	< 0.1 ug/l	**0.9 ug/l**	**2.7 ug/l**
27	Mecoprop	<0.16 ug/l	< 0.16 ug/l	< 0.16 ug/l	< 0.4 ug/l
28	2,4-D	<0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.50 ug/l
29	MCPA	<0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.50 ug/l
30	Linuron	<0.50 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
31	Dichlobenil	< 2 ng/l	< 165 ng/l	< 2 ng/l	< 4 ng/l
32	2,6-Dichlorobenzamide	N/A	N/A	N/A	N/A
	Diazinon	<0.003 ug/l	< 0.217 ug/l	<0.003 ug/l	<0.005 ug/l
33	PCB's (Sum of 7)	< 16 ng/l	< 1289 ng/l	< 16 ng/l	< 33 ng/l
34	Phenols	**65.1 ug/l**	**155 ug/l**	**38.5 ug/l**	**55.2 ug/l**
34	m,p- Methylphenol	**118 ug/l**	**233 ug/l**	**70 ug/l**	**268 ug/l**
	o- Methylphenol	< 2.0 ug/l	< 2.0 ug/l	< 1.0 ug/l	< 2.0 ug/l
35	Lead	**14 ug/l**	< 6.0 ug/l	**18 ug/l**	**8.0 ug/l**
36	Arsenic	**2.6 ug/l**	**2.2 ug/l**	**2.5 ug/l**	**2.2 ug/l**
37	Copper	**38 ug/l**	**16 ug/l**	**183 ug/l**	**92 ug/l**
38	Zinc	**136 ug/l**	**50 ug/l**	**507 ug/l**	**145 ug/l**
39	Cadmium	<0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l
40	Mercury	<0.2 ug/l	< 0.20 ug/l	< 0.2 ug/l	< 0.20 ug/l
41	Chromium	**2.0 ug/l**	< 2.0 ug/l	**4.0 ug/l<**	**5.0 ug/l**
42	Selenium	**1.6 ug/l**	**1.76 ug/l**	**0.98 ug/l**	< 0.80 ug/l
43	Antimony	<1.2 ug/l	< 1.2 ug/l	**1.3 ug/l**	**1.7 ug/l**
44	Molybdenum	**11 ug/l**	< 3.0 ug/l	**3 ug/l**	**11.0 ug/l**
45	Tin (Total)	< 7 ug/l	< 7 ug/l	**12 ug/l**	**9 ug/l**
46	Barium	**33.5 ug/l**	**17.1 ug/l**	**41.2 ug/l**	**44.1 ug/l**
47	Boron	< 0.23 mg/l	< 0.23 mg/l	< 0.23 mg/l	< 0.23 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	**11 ug/l**	< 3 ug/l	**19 ug/l**	**5 ug/l**
51	Fluoride	0.4 mg/l	0.4 mg/l	0.3 mg/l	0.5 mg/l
52	Chloride	155 mg/l	145 mg/l	53 mg/l	442 mg/l

No.	Compound	1514431 Dun Laoire West Pier	1514430 UCD FM 10 (Dodder)	1514432 Sutton Sump	1514218 Ringsend Main Lift
53	TOC	-	-	-	-
54	Cyanide	< 9 ug/l	< 9 ug/l	< 9 ug/l	< 9 ug/l
55	Conductivity(uS/cm)	1138	954	332	2001
56	Hardness (mg/l CaCO3)	-	-	-	-
57	pH	8.7	7.5	7.3	7.4

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 **214,482** cubic metres of leachate was received in 2018 as tabulated below:

Landfill Source	Local Authority	Leachate Annual Volume 2018 (m^3)	Daily PE Load (using volume)	Daily % Influent PE Load to WWTP
Ballynagran (by tanker)	Wicklow County Council	22,691	276.3	0.014%
Kerdiffstown (by tanker)	Kildare County Council	9,842	119.8	0.0062%
Bord Na Mona Drehid Landfill (by tanker)	Kildare County Council	21,846	266	0.0137%
Knockharley Landfill (by tanker)	Meath County Council	12,799	155.8	0.008%
Rampere Landfill (by tanker)	Wicklow County Council	88	1	<0.00005%
Dunsink Landfill Leachate (delivered by sewer network)	Fingal County Council	147,216	1,793	0.092%
Total		**214,482**	**2,611.9**	**0.135%**

The daily leachate PE load represents **< 0.135 %** of the average daily calculated PE load in 2018 (**1,939,733 PE**).

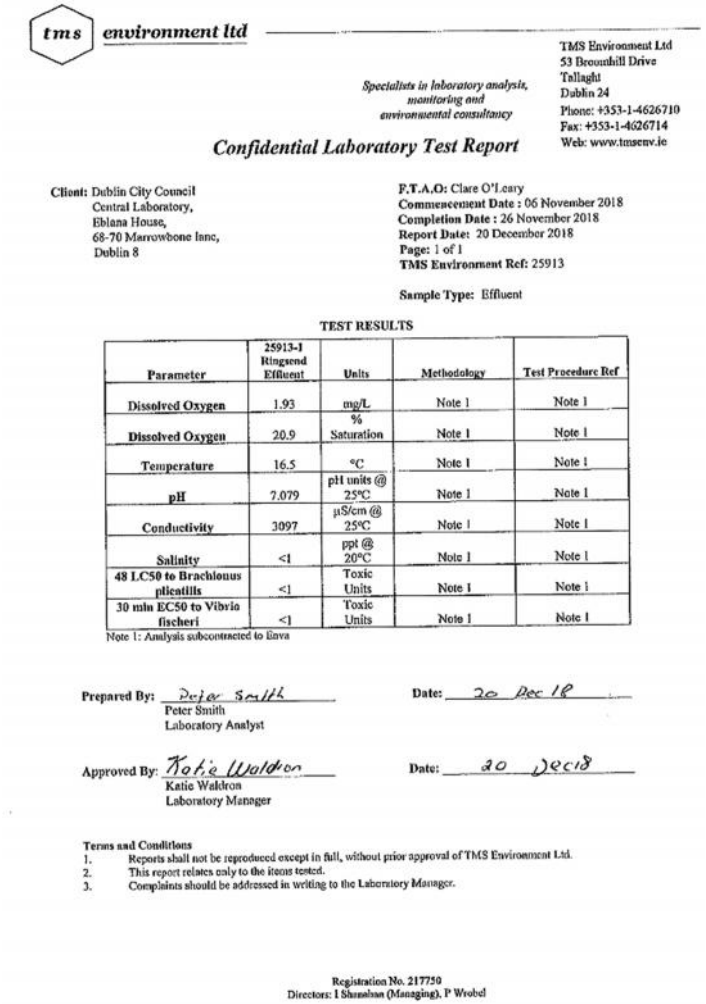
Appendix 7.4 - Final Effluent Toxicity Assessment

A treated SBR effluent sample (1490393) taken on 06/11/18 from the Ringsend Plant was tested for aquatic toxicity by ENVA.

Results show a value of <1 TU for testing with Vibrio fischeri (30 min EC50)

Results show a value of < 1 TU for testing with *Brachionus Plicatilis* (48 hour LC50)

This complies with the licence limit of 5 TU.



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Confidential Laboratory Test Report

Client: Dublin City Council
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F.T.A.O: Clare O'Leary
Commencement Date : 06 November 2018
Completion Date : 26 November 2018
Report Date: 20 December 2018
Page: 1 of 1
TMS Environment Ref: 25913

Sample Type: Effluent

TEST RESULTS

Parameter	25913-1 Ringsend Effluent	Units	Methodology	Test Procedure Ref
Dissolved Oxygen	1.93	mg/L	Note 1	Note 1
Dissolved Oxygen	20.9	% Saturation	Note 1	Note 1
Temperature	16.5	°C	Note 1	Note 1
pH	7.079	pH units @ 25°C	Note 1	Note 1
Conductivity	3097	µS/cm @ 25°C	Note 1	Note 1
Salinity	<1	ppt @ 20°C	Note 1	Note 1
48 LC50 to Brachionus plicatilis	<1	Toxic Units	Note 1	Note 1
30 min EC50 to Vibrio fischeri	<1	Toxic Units	Note 1	Note 1

Note 1: Analysis subcontracted to Enva

Prepared By: Peter Smith — **Date:** 20 Dec 18
Peter Smith
Laboratory Analyst

Approved By: Katie Waldron — **Date:** 20 Dec 18
Katie Waldron
Laboratory Manager

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Registration No. 217750
Directors: I Shanahan (Managing), P Wrobel

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

Below tables the 2018 Met Eireann Orange and Red Weather Alert dates and the corresponding dates where the effluent treatment performance was negatively affected.

Date	Met Eireann Orange and Red Alerts	Effluent Treatment Performance Affected
02/01/2018	Wind	TSS 136 mg/l
07/01/2018	Low Temperature	
24/01/2018	Wind	TSS - 98 mg/l
27/02/2018	Snow/Ice	
28/02/2018	Snow/Ice	
01/03/2018	Snow/Ice	
02/03/2018	Snow/Ice	TSS – 100 mg/l
03/03/3018	Snow/Ice	
04/03/2018	Snow/Ice	TSS - 290 mg/l
05/03/2018	Snow/Ice	
17/03/2018	Snow/Ice	
18/03/2018	Snow/Ice	
19/03/2108	Wind	BOD - 54mg/l
11/10/2018	Wind	
12/10/2018	Wind	
15/12/2008	Wind	