Annual Environmental Report

2020

Sligo

D0014-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0014-01, Sligo, in Sligo in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

1.2 TREATMENT SUMMARY

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

- SLIGO WWTP - 2020 with a Plant Capacity PE of 50000, the treatment type is 3P - Tertiary P removal

1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF2700D0014SW001	SLIGO WWTP - 2020	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
There are no Licence Specific Reports included in the AER.	

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 SLIGO WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - SLIGO WWTP - 2020

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

Parameters	Number of Samples	Annual Max	Annual Mean
Total Nitrogen mg/l	12	32.7	10.61
Total Phosphorus (as P) mg/l	12	4.8	1.06
COD-Cr mg/l	12	416	126.51
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	176	44.54
Suspended Solids mg/l	12	168	56.95
Hydraulic Capacity	N/A	81340	25233

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is greater than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional ‘Operational Performance Summary’. The design of the wastewater tretament plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF2700D0014SW000

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	26	N/A	N/A	24.17	Pass
Suspended Solids mg/l	35	87.5	N/A	26	N/A	N/A	7.85	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	26	N/A	N/A	3.67	Pass
Temperature °C	25	25	N/A	26	N/A	N/A	11.66	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	26	N/A	N/A	4.66	Pass
Ammonia-Total (as N) mg/l	10	12	N/A	26	N/A	N/A	1.21	Pass
pH pH units	9	9	N/A	26	N/A	N/A	7.94	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	26	N/A	N/A	0.29	Pass
Polychlorinated biphenyls µg/l	0.3	0.36	N/A	1	1	1	<0.016	Pass

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Salinity ppt	<10% deviation	N/A	N/A	17	N/A	N/A	0.28	Pass
Cadmium - unfiltered µg/l	N/A	N/A	N/A	1	N/A	N/A	0.3	
Chromium - filtered mg/l	N/A	N/A	N/A	1	N/A	N/A	3	
Faecal coliforms no./100mls	N/A	N/A	N/A	4	N/A	N/A	N/A	
Fats, Oils & Greases mg/l	N/A	N/A	N/A	4	N/A	N/A	4	
Nitrite (as NO2) mg/l	N/A	N/A	N/A	5	N/A	N/A	0.5	
E. Coli MPN/100ml	N/A	N/A	N/A	4	N/A	N/A	1142.06	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	26	N/A	N/A	0.15	
Zinc - filtered µg/l	N/A	N/A	N/A	1	N/A	N/A	120	
Enterococci (Intestinal) cfu/100ml	N/A	N/A	N/A	3	N/A	N/A	958.85	
Nitrite (as N) mg/l	N/A	N/A	N/A	21	N/A	N/A	0.36	

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Arsenic - unfiltered µg/l	N/A	N/A	N/A	1	N/A	N/A	1	
Mercury - filtered µg/l	N/A	N/A	N/A	1	N/A	N/A	0.09	
Copper - unfiltered mg/l	N/A	N/A	N/A	1	N/A	N/A	0.03	
Dissolved Oxygen mg/l	N/A	N/A	N/A	25	N/A	N/A	8.29	
Nitrate (as N) mg/l	N/A	N/A	N/A	26	N/A	N/A	4.39	
Enterococci (Intestinal) MPN/100ml	N/A	N/A	N/A	1	N/A	N/A	900	
Conductivity @20°C µS/cm	N/A	N/A	N/A	26	N/A	N/A	789.79	
Lead - unfiltered µg/l	N/A	N/A	N/A	1	N/A	N/A	0.9	
Nickel - filtered µg/l	N/A	N/A	N/A	1	N/A	N/A	3	
Petroleum hydrocarbons µg/l	N/A	N/A	N/A	3	N/A	N/A	<10	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

Cause of Exceedance(s):

Not applicable

Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF2700D0014SW000

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

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

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	170003, 335887	RS35G010180	No	No	No	Yes	Poor
Upstream	169485, 335974	RS35G010230	No	No	No	Yes	Poor
Downstream	168053, 337162	TW27005308SB5010	No	No	No	Yes	Moderate
Downstream	166501, 339153	TW27005308SB5011	No	No	No	Yes	Moderate
Downstream	168900, 336370	TW27005308SB5009	No	No	No	Yes	Moderate
Downstream	169045, 336236	TW27005308SB5008	No	No	No	Yes	Moderate
Downstream	166553, 336802	TW27005308SB5012	No	No	No	Yes	Moderate

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Downstream	163026, 339692	TW27005308SB5013	No	No	No	Yes	Moderate

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010230	1	TW27005308SB5008	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010180	1	TW27005308SB5011	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010230	1	TW27005308SB5009	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010180	1	TW27005308SB5008	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010230	1	TW27005308SB5011	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010230	1	TW27005308SB5010	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010180	1	TW27005308SB5010	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010180	1	TW27005308SB5009	1	1.5	

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010180	1	TW27005308SB5013	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010180	1	TW27005308SB5012	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010230	1	TW27005308SB5013	1	1.5	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS35G010230	1	TW27005308SB5012	1	1.5	
Ammonia-Total (as N) mg/l	RS35G010180	0.052	TW27005308SB5012	0.046	0.065	-9.2
Ammonia-Total (as N) mg/l	RS35G010180	0.052	TW27005308SB5010	0.092	0.065	61.5
Ammonia-Total (as N) mg/l	RS35G010230	0.049	TW27005308SB5012	0.046	0.065	-4.6
Ammonia-Total (as N) mg/l	RS35G010180	0.052	TW27005308SB5009	0.29	0.065	366.2
Ammonia-Total (as N) mg/l	RS35G010230	0.049	TW27005308SB5010	0.092	0.065	66.2
Ammonia-Total (as N) mg/l	RS35G010180	0.052	TW27005308SB5013	0.039	0.065	-20
Ammonia-Total (as N) mg/l	RS35G010230	0.049	TW27005308SB5008	0.351	0.065	464.6
Ammonia-Total (as N) mg/l	RS35G010230	0.049	TW27005308SB5009	0.29	0.065	370.8
Ammonia-Total (as N) mg/l	RS35G010180	0.052	TW27005308SB5008	0.351	0.065	460
Ammonia-Total (as N) mg/l	RS35G010230	0.049	TW27005308SB5013	0.039	0.065	-15.4

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Ammonia-Total (as N) mg/l	RS35G010180	0.052	TW27005308SB5011	0.037	0.065	-23.1
Ammonia-Total (as N) mg/l	RS35G010230	0.049	TW27005308SB5011	0.037	0.065	-18.5
ortho-Phosphate (as P) - unspecified mg/l	RS35G010230	0.004	TW27005308SB5010	0.005	0.035	4.2
ortho-Phosphate (as P) - unspecified mg/l	RS35G010180	0.004	TW27005308SB5012	0.006	0.035	7
ortho-Phosphate (as P) - unspecified mg/l	RS35G010180	0.004	TW27005308SB5009	0.007	0.035	9.9
ortho-Phosphate (as P) - unspecified mg/l	RS35G010230	0.004	TW27005308SB5009	0.007	0.035	9.9
ortho-Phosphate (as P) - unspecified mg/l	RS35G010180	0.004	TW27005308SB5011	0.004	0.035	0
ortho-Phosphate (as P) - unspecified mg/l	RS35G010230	0.004	TW27005308SB5012	0.006	0.035	7
ortho-Phosphate (as P) - unspecified mg/l	RS35G010180	0.004	TW27005308SB5013	0.004	0.035	0
ortho-Phosphate (as P) - unspecified mg/l	RS35G010230	0.004	TW27005308SB5011	0.004	0.035	0
ortho-Phosphate (as P) - unspecified mg/l	RS35G010180	0.004	TW27005308SB5010	0.005	0.035	4.2

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
ortho-Phosphate (as P) - unspecified mg/l	RS35G010180	0.004	TW27005308SB5008	0.007	0.035	9.9
ortho-Phosphate (as P) - unspecified mg/l	RS35G010230	0.004	TW27005308SB5013	0.004	0.035	0
ortho-Phosphate (as P) - unspecified mg/l	RS35G010230	0.004	TW27005308SB5008	0.007	0.035	9.9
Chlorophyll µg/l	RS35G010180	2.11	TW27005308SB5008	3.19		
Chlorophyll µg/l	RS35G010180	2.11	TW27005308SB5012	4.71		
Coliform Bacteria (Total) MPN/100ml	RS35G010180	3076	TW27005308SB5010	3420		
Chlorophyll µg/l	RS35G010230	2.28	TW27005308SB5012	4.71		
Coliform Bacteria (Total) MPN/100ml	RS35G010180	3076	TW27005308SB5009	12993		
Chlorophyll µg/l	RS35G010230	2.28	TW27005308SB5009	2.11		
Chlorophyll µg/l	RS35G010180	2.11	TW27005308SB5011	1.1		
Chlorophyll µg/l	RS35G010180	2.11	TW27005308SB5009	2.11		
Conductivity @20°C µS/cm	RS35G010180	0	TW27005308SB5013	44.5		
Coliform Bacteria (Total) MPN/100ml	RS35G010230	1563.5	TW27005308SB5009	12993		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Coliform Bacteria (Total) MPN/100ml	RS35G010230	1563.5	TW27005308SB5010	3420		
Conductivity @20°C µS/cm	RS35G010180	0	TW27005308SB5009	9		
Coliform Bacteria (Total) MPN/100ml	RS35G010230	1563.5	TW27005308SB5008	13927		
Conductivity @20°C µS/cm	RS35G010230	0	TW27005308SB5012	42		
Coliform Bacteria (Total) MPN/100ml	RS35G010230	1563.5	TW27005308SB5012	221.5		
Conductivity @20°C µS/cm	RS35G010230	0	TW27005308SB5008	10.5		
Coliform Bacteria (Total) MPN/100ml	RS35G010230	1563.5	TW27005308SB5013	132		
Conductivity @20°C µS/cm	RS35G010230	0	TW27005308SB5010	20		
Conductivity @20°C µS/cm	RS35G010180	0	TW27005308SB5011	24.5		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010180	0.2	TW27005308SB5009	0.3		
Coliform Bacteria (Total) MPN/100ml	RS35G010230	1563.5	TW27005308SB5011	1938		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010180	0.2	TW27005308SB5012	0		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010180	0.2	TW27005308SB5011	0.2		
Dissolved Oxygen mg/l	RS35G010180	10.06	TW27005308SB5009	9.63		
Dissolved Oxygen mg/l	RS35G010180	10.06	TW27005308SB5013	8.755		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5009	0.3		
Dissolved Oxygen mg/l	RS35G010180	10.06	TW27005308SB5011	9.75		
Dissolved Oxygen mg/l	RS35G010230	10.435	TW27005308SB5008	9.705		
Dissolved Oxygen mg/l	RS35G010180	10.06	TW27005308SB5012	8.735		
Dissolved Oxygen mg/l	RS35G010230	10.435	TW27005308SB5009	9.63		
Dissolved Oxygen mg/l	RS35G010180	10.06	TW27005308SB5008	9.705		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010180	0.2	TW27005308SB5013	0.1		
Dissolved Oxygen mg/l	RS35G010230	10.435	TW27005308SB5011	9.75		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010180	0.2	TW27005308SB5008	0.4		
E. Coli no./100mls	RS35G010230	97.5	TW27005308SB5011	374		
Enterococci (Intestinal) cfu/100ml	RS35G010180	75	TW27005308SB5009	545		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
E. Coli no./100mls	RS35G010180	23	TW27005308SB5013	28.5		
E. Coli no./100mls	RS35G010230	97.5	TW27005308SB5008	12223		
E. Coli no./100mls	RS35G010180	23	TW27005308SB5012	7		
Enterococci (Intestinal) cfu/100ml	RS35G010180	75	TW27005308SB5008	570		
E. Coli no./100mls	RS35G010230	97.5	TW27005308SB5010	260.5		
Enterococci (Intestinal) cfu/100ml	RS35G010230	24	TW27005308SB5012	13		
Enterococci (Intestinal) cfu/100ml	RS35G010180	75	TW27005308SB5012	13		
pH pH units	RS35G010180	8.395	TW27005308SB5009	8.375		
pH pH units	RS35G010230	8.445	TW27005308SB5008	8.28		
pH pH units	RS35G010230	8.445	TW27005308SB5010	8.24		
Salinity ppt	RS35G010180	0	TW27005308SB5012	27.24		
pH pH units	RS35G010180	8.395	TW27005308SB5012	8.08		
pH pH units	RS35G010230	8.445	TW27005308SB5012	8.08		
pH pH units	RS35G010230	8.445	TW27005308SB5011	8.155		
pH pH units	RS35G010180	8.395	TW27005308SB5008	8.28		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Temperature °C	RS35G010230	11.89	TW27005308SB5011	12.005		
Temperature °C	RS35G010180	11.96	TW27005308SB5012	12.59		
Total Nitrogen mg/l	RS35G010180	0.5	TW27005308SB5013	0.5		
Salinity ppt	RS35G010180	0	TW27005308SB5010	12.41		
Temperature °C	RS35G010230	11.89	TW27005308SB5008	11.58		
Temperature °C	RS35G010230	11.89	TW27005308SB5010	11.44		
Temperature °C	RS35G010180	11.96	TW27005308SB5008	11.58		
Salinity ppt	RS35G010180	0	TW27005308SB5011	15.425		
Temperature °C	RS35G010180	11.96	TW27005308SB5013	10.95		
pH pH units	RS35G010230	8.445	TW27005308SB5013	8.065		
Temperature °C	RS35G010180	11.96	TW27005308SB5009	12.33		
pH pH units	RS35G010230	8.445	TW27005308SB5009	8.375		
Total Oxidised Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5010	0.06		
Turbidity NTU's	RS35G010180	0	TW27005308SB5009	13.05		
Temperature °C	RS35G010230	11.89	TW27005308SB5012	12.59		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Total Oxidised Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5011	0.173		
Total Oxidised Nitrogen (as N) mg/l	RS35G010180	0.111	TW27005308SB5010	0.06		
Total Nitrogen mg/l	RS35G010230	0.5	TW27005308SB5009	0.535		
Temperature °C	RS35G010230	11.89	TW27005308SB5013	10.95		
Total Nitrogen mg/l	RS35G010180	0.5	TW27005308SB5012	0.5		
Total Oxidised Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5013	0.02		
Total Nitrogen mg/l	RS35G010230	0.5	TW27005308SB5011	0.5		
Total Nitrogen mg/l	RS35G010180	0.5	TW27005308SB5010	0.528		
Turbidity NTU's	RS35G010230	0	TW27005308SB5010	12.45		
Total Oxidised Nitrogen (as N) mg/l	RS35G010180	0.111	TW27005308SB5009	0.1		
Temperature °C	RS35G010230	11.89	TW27005308SB5009	12.33		
Turbidity NTU's	RS35G010180	0	TW27005308SB5013	11.3		
Turbidity NTU's	RS35G010230	0	TW27005308SB5012	159.9		
Total Oxidised Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5008	0.1		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Turbidity NTU's	RS35G010180	0	TW27005308SB5008	0		
Total Oxidised Nitrogen (as N) mg/l	RS35G010180	0.111	TW27005308SB5011	0.173		
Turbidity NTU's	RS35G010230	0	TW27005308SB5011	9.95		
Turbidity NTU's	RS35G010230	0	TW27005308SB5013	11.3		
Turbidity NTU's	RS35G010230	0	TW27005308SB5009	13.05		
Chlorophyll µg/l	RS35G010230	2.28	TW27005308SB5011	1.1		
Chlorophyll µg/l	RS35G010180	2.11	TW27005308SB5010	2.45		
Chlorophyll µg/l	RS35G010180	2.11	TW27005308SB5013	1.4		
Coliform Bacteria (Total) MPN/100ml	RS35G010180	3076	TW27005308SB5011	1938		
Chlorophyll µg/l	RS35G010230	2.28	TW27005308SB5008	3.19		
Chlorophyll µg/l	RS35G010230	2.28	TW27005308SB5013	1.4		
Chlorophyll µg/l	RS35G010230	2.28	TW27005308SB5010	2.45		
Coliform Bacteria (Total) MPN/100ml	RS35G010180	3076	TW27005308SB5008	13927		
Coliform Bacteria (Total) MPN/100ml	RS35G010180	3076	TW27005308SB5013	132		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Conductivity @20°C µS/cm	RS35G010180	0	TW27005308SB5010	20		
Conductivity @20°C µS/cm	RS35G010180	0	TW27005308SB5008	10.5		
Conductivity @20°C µS/cm	RS35G010230	0	TW27005308SB5011	24.5		
Conductivity @20°C µS/cm	RS35G010230	0	TW27005308SB5013	44.5		
Conductivity @20°C µS/cm	RS35G010180	0	TW27005308SB5012	42		
Conductivity @20°C µS/cm	RS35G010230	0	TW27005308SB5009	9		
Coliform Bacteria (Total) MPN/100ml	RS35G010180	3076	TW27005308SB5012	221.5		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5011	0.2		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5008	0.4		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5012	0		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010180	0.2	TW27005308SB5010	0.2		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5010	0.2		
Dissolved Oxygen mg/l	RS35G010180	10.06	TW27005308SB5010	10.01		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Dissolved Oxygen mg/l	RS35G010230	10.435	TW27005308SB5013	8.755		
E. Coli no./100mls	RS35G010180	23	TW27005308SB5010	260.5		
E. Coli no./100mls	RS35G010180	23	TW27005308SB5008	12223		
Dissolved Oxygen mg/l	RS35G010230	10.435	TW27005308SB5012	8.735		
Dissolved Inorganic Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5013	0.1		
E. Coli no./100mls	RS35G010180	23	TW27005308SB5009	8754		
Enterococci (Intestinal) cfu/100ml	RS35G010180	75	TW27005308SB5013	16		
Dissolved Oxygen mg/l	RS35G010230	10.435	TW27005308SB5010	10.01		
Enterococci (Intestinal) cfu/100ml	RS35G010180	75	TW27005308SB5011	74		
Enterococci (Intestinal) cfu/100ml	RS35G010230	24	TW27005308SB5009	545		
Enterococci (Intestinal) cfu/100ml	RS35G010230	24	TW27005308SB5008	570		
E. Coli no./100mls	RS35G010230	97.5	TW27005308SB5012	7		
E. Coli no./100mls	RS35G010230	97.5	TW27005308SB5013	28.5		
E. Coli no./100mls	RS35G010230	97.5	TW27005308SB5009	8754		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Enterococci (Intestinal) cfu/100ml	RS35G010180	75	TW27005308SB5010	130		
Enterococci (Intestinal) cfu/100ml	RS35G010230	24	TW27005308SB5011	74		
Enterococci (Intestinal) cfu/100ml	RS35G010230	24	TW27005308SB5010	130		
E. Coli no./100mls	RS35G010180	23	TW27005308SB5011	374		
Salinity ppt	RS35G010180	0	TW27005308SB5009	5.185		
Salinity ppt	RS35G010180	0	TW27005308SB5013	28.795		
pH pH units	RS35G010180	8.395	TW27005308SB5010	8.24		
Salinity ppt	RS35G010180	0	TW27005308SB5008	6.31		
pH pH units	RS35G010180	8.395	TW27005308SB5011	8.155		
Salinity ppt	RS35G010230	0	TW27005308SB5011	15.425		
Salinity ppt	RS35G010230	0	TW27005308SB5009	5.185		
pH pH units	RS35G010180	8.395	TW27005308SB5013	8.065		
Salinity ppt	RS35G010230	0	TW27005308SB5012	27.24		
Enterococci (Intestinal) cfu/100ml	RS35G010230	24	TW27005308SB5013	16		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Total Nitrogen mg/l	RS35G010180	0.5	TW27005308SB5008	0.5		
Salinity ppt	RS35G010230	0	TW27005308SB5008	6.31		
Salinity ppt	RS35G010230	0	TW27005308SB5013	28.795		
Salinity ppt	RS35G010230	0	TW27005308SB5010	12.41		
Total Nitrogen mg/l	RS35G010180	0.5	TW27005308SB5009	0.535		
Temperature °C	RS35G010180	11.96	TW27005308SB5010	11.44		
Total Nitrogen mg/l	RS35G010180	0.5	TW27005308SB5011	0.5		
Total Nitrogen mg/l	RS35G010230	0.5	TW27005308SB5008	0.5		
Total Oxidised Nitrogen (as N) mg/l	RS35G010180	0.111	TW27005308SB5013	0.02		
Total Oxidised Nitrogen (as N) mg/l	RS35G010180	0.111	TW27005308SB5008	0.1		
Total Oxidised Nitrogen (as N) mg/l	RS35G010180	0.111	TW27005308SB5012	0.1		
Total Nitrogen mg/l	RS35G010230	0.5	TW27005308SB5010	0.528		
Turbidity NTU's	RS35G010180	0	TW27005308SB5010	12.45		
Total Nitrogen mg/l	RS35G010230	0.5	TW27005308SB5012	0.5		
Turbidity NTU's	RS35G010180	0	TW27005308SB5012	159.9		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Turbidity NTU's	RS35G010230	0	TW27005308SB5008	0		
Temperature °C	RS35G010180	11.96	TW27005308SB5011	12.005		
Total Oxidised Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5009	0.1		
Total Oxidised Nitrogen (as N) mg/l	RS35G010230	0.1	TW27005308SB5012	0.1		
Turbidity NTU's	RS35G010180	0	TW27005308SB5011	9.95		
Total Nitrogen mg/l	RS35G010230	0.5	TW27005308SB5013	0.5		

Significance of Results:

The WWTP discharge was compliant with the ELV’s set in the wastewater discharge licence.

The ambient monitoring results does not meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a deterioration in Ammonia - Total (as N) and Ortho-P, concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are: Unknown

The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - SLIGO WWTP - 2020

2.1.4.1 Treatment Efficiency Report - SLIGO WWTP - 2020

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
cBOD	433480	28567	93
TP	10311	2256	78
SS	554238	61113	89
COD	1231264	188182	85
TN	103219	N/A	N/A

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

2.1.4.2 Treatment Capacity Report Summary - SLIGO WWTP - 2020

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.

SLIGO WWTP - 2020	
Peak Hydraulic Capacity (m^3/day) - As Constructed	37500
DWF to the Treatment Plant (m^3/day)	12500
Current Hydraulic Loading - annual max (m^3/day)	81340

SLIGO WWTP - 2020	
Average Hydraulic loading to the Treatment Plant (m^3/day)	25233
Organic Capacity (PE) - As Constructed	50000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	26418
Organic Capacity (PE) - Remaining	23582
Will the capacity be exceeded in the next three years? (Yes/No)	No

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

2.1.5 SLUDGE / OTHER INPUTS - SLIGO WWTP - 2020

'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)
Other	10871.4	Weight (Tonnes)		82.6	No	Yes	Yes
Domestic /Septic Tank Sludge	1802.18	Weight (Tonnes)	1200	13.7	No	Yes	Yes
Other	309.5	Weight (Tonnes)		2.4	No	Yes	Yes
Waterworks Sludge	163.52	Weight (Tonnes)		1.3	No	Yes	Yes

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

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

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2020.			

3.2 REPORTED INCIDENTS SUMMARY

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

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
There were no reportable incidents in 2020.				

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	0
Number of Incidents reported to the EPA via EDEN in 2020	0
Explanation of any discrepancies between the two numbers above	N/A

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
(P)SW1	168437, 336785	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW3	168982, 336274	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW4	169661, 335960	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW5	169331, 335975	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SWA	167874, 337377	No	Low	Meeting	Unknown	887695	Monitored
TBC	169157, 336063	No	Low	Meeting	Unknown	Unknown	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 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
TBC	169157, 336063	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	N/A
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?	N/A

4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS.

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

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

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
There are no Specified Improvement Programmes for this Agglomeration.							

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

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
There are no Improvements Programme for this Agglomeration.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Table.

5 LICENCE SPECIFIC REPORTS

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

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	2014	No	
Shellfish Impact Assessment	Yes		No	
Toxicity of Final Effluent	Yes	2012	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

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

5.2 TOXICITY OF FINAL EFFLUENT

The Toxicity of Final Effluent Report has been included in the AER 2012

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration of a Technical Amendment / Review of the licence?	No
List reason e.g. additional SWO identified	N/A
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

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

Signed: Date: 08/04/2021

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

Katherine Walshe

Acting Head of Environmental Regulation.

7 APPENDIX

There are no Appendices included