Annual Environmental Report

2021

Sligo

D0014-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 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.

There was no major capital or operational changes undertaken.

1.2 TREATMENT SUMMARY

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

- SLIGO WWTP 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	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 SLIGO WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - SLIGO WWTP

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

Parameters	Number of Samples	Annual Max	Annual Mean
Total Nitrogen mg/l	12	27	15
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	168	73
Suspended Solids mg/l	12	560	108
COD-Cr mg/l	12	560	188
Total Phosphorus (as P) mg/l	12	4.48	1.79
Hydraulic Capacity	N/A	81822	21332

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 treatment 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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	24	N/A	N/A	27	Pass
Suspended Solids mg/l	35	88	N/A	24	N/A	N/A	6.41	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	24	N/A	N/A	4.57	Pass
Temperature °C	25	25	N/A	24	N/A	N/A	11	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	23	N/A	N/A	4.53	Pass
Ammonia-Total (as N) mg/l	10	12	N/A	23	N/A	N/A	1.45	Pass
pH units	9.00	9.00	N/A	24	N/A	N/A	7.79	Pass
Total Phosphorus (as P) mg/l	2.00	2.40	N/A	24	N/A	N/A	0.468	Pass
Nitrite (as N) mg/l	N/A	N/A	N/A	14	N/A	N/A	0.773	

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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Conductivity @20°C µS/cm	N/A	N/A	N/A	24	N/A	N/A	926	
E. Coli no./100mls	N/A	N/A	N/A	1	N/A	N/A	25	
Nitrite (as NO2) mg/l	N/A	N/A	N/A	2	N/A	N/A	0.393	
Salinity ppt	N/A	N/A	N/A	12	N/A	N/A	0.707	
Fats, Oils & Greases mg/l	N/A	N/A	N/A	3	N/A	N/A	1.53	
E. Coli MPN/100ml	N/A	N/A	N/A	4	N/A	N/A	608	
ortho-Phosphate (as PO4) mg/l	N/A	N/A	N/A	7	N/A	N/A	0.111	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	16	N/A	N/A	0.520	
Enterococci (Intestinal) cfu/100ml	N/A	N/A	N/A	5	N/A	N/A	198	
Nitrate (as N) mg/l	N/A	N/A	N/A	23	N/A	N/A	4.03	
Dissolved Oxygen mg/l	N/A	N/A	N/A	24	N/A	N/A	9.41	

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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Faecal coliforms no./100mls	N/A	N/A	N/A	5	N/A	N/A	944	
Nitrite (as N) µg/l	N/A	N/A	N/A	7	N/A	N/A	0.644	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

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 Ecological 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
Downstream	163026, 339692	TW27005308SB5013	No	No	No	Yes	Moderate

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient monitoring summary**

Significance of Results:

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

The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

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 not have an observable negative impact on the Water Framework Directive status.

The discharge from the wastewater treatment plant does not have an observable impact on the coastal/transitional water quality.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - SLIGO WWTP

2.1.4.1 Treatment Efficiency Report - SLIGO WWTP

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

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

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TP	12646	3198	75
TN	109299	N/A	N/A
SS	762283	43759	94
COD	1331145	181914	86
cBOD	518277	31190	94

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

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	
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)	81822

SLIGO WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	21332
Organic Capacity (PE) - As Constructed	50000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	27208
Organic Capacity (PE) - Remaining	22792
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

'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	13802	Weight (Tonnes)		87.7	No	Yes	Yes
Domestic /Septic Tank Sludge	1212	Weight (Tonnes)		7.7	No	Yes	Yes
Waterworks Sludge	722	Weight (Tonnes)		4.6	No	Yes	Yes

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2021.			

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 2021.				

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	0
Number of Incidents reported to the EPA via EDEN in 2021	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 (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
(P)SW1/SWB	168439, 336785	Yes	Low	Meeting	Unknown	Unknown	Monitored
SW3	168981, 336274	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW4	169660, 335962	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW5	169347, 335975	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SWA	167881, 337366	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	169157, 336063	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	TBC, TBC	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	168507, 336839	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	956621
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 a 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 other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Tables 4.2.1 and 4.2.2.

5 LICENCE SPECIFIC REPORTS

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

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

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Has a Technical amendment/licence review application been submitted to the Agency by IW?	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	N/A

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

Signed: Date: 21/04/2022

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

Katherine Walshe

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambeint Monitoring Report Summary Data

		Designations				
Ambient monitoring point/Coastal Monitoring Code	Irish Grid Reference	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
SMDAMB24062001, RS35G010180	170,003m E, 335,887m N	No	No	No	No	At Risk
SMDAMB24062002, RS35G010230	169,485m E, 335,974m N	No	No	No	No	At Risk
SMDAMB24062005, TW2700538SB5010	168,053m E 337,162m N	No	No	No	No	Review
SMDAMB24062006, TW2700538SB5011	166,501m E 339,153m N	No	No	No	No	Review
SMDAMB24062003, TW2700538SB5008	169,045m E 336,236m N	No	No	No	No	Review
SMDAMB24062004, TW2700538SB5009	168,900m E 336,370m N	No	No	No	No	Review
SMDAMB24062008, TW2700538SB5013	163,026m E 339,692m N	No	No	No	No	Review
SMDAMB24062007, TW2700538SB5012	166,553m E 336,802m N	No	No	No	No	Review

Ambient Monitoring Results Summary

Monitoring point	Date	Ammonia N	BOD, 5 days with Inhibition (Carbonaceous)	Chlorophyll	Coliform Bacteria	Conductivity @ 20°C	Dissolved Inorganic Nitrogen DIN	Dissolved Oxygen	E Coli	Enterococci	Ortho-Phosphate PO4-P	pH	Salinity	Temperature	Total Nitrogen N	Total Oxidised Nitrogen N	Turbidity
		mg/l	mg/l	µg/l	MPN/100mls	µS/cm	mg/l	mg/l	no./100mls	cfu/100mls	mg/l	pH units	ppt	Degrees C	mg/l	mg/l	NTU
RS35G010180	10/03/2021				37	0		10.74	3	150		8.41	0	6.81			0
RS35G010230	10/03/2021				48	0		10.89	4	12		8.65	0	6.73			0.3
RS35G010180	30/06/2021	0.055	1	2.29	657	0	0.2	9.75	10	5	0.008	8.61	0	17.43	0.609	0.163	0
RS35G010230	30/06/2021	0.028	1	2.32	512	0	0.2	10.48	31	12	0.007	9.86	0	17.48	0.5	0.159	0
RS35G010180	15/09/2021				488	0		9.52	155	210		8.31	0	16.75			0.1
RS35G010230	15/09/2021				1986	0		9.57	488	870		8.16	0	16.77			0.1
RS35G010180	14/12/2021	0.01	1	7.03	101	0	0.6	13.1	29	4	0.01	7.95	0.16	5.15	0.63	0.323	1.5
RS35G010230	14/12/2021	0.01	1	7.24	127	0	0.6	13.97	36	10	0.01	8.28	0.17	4.86	0.59	0.369	1.83
TW27005308SB5008	10/03/2021				248	0		11.3	41	11		8.68	0	6.88			0.2
TW27005308SB5009	10/03/2021				6868	2		11.07	2187	190		8.69	1.01	7.12			8.9
TW27005308SB5010	10/03/2021				19863	7		9.6	8664	1600		7.8	3.78	7.16			17.9
TW27005308SB5011	10/03/2021				2613	7		10.23	521	180		8.04	3.8	8.07			35.7
TW27005308SB5012	10/03/2021				866	8		10.31	108	36		7.92	4.54	7.92			2.4
TW27005308SB5013	10/03/2021				326	42		9.09	17	326		7.91	27	7.61			27.6
TW27005308SB5008	30/06/2021	0.034	1	2.28	24200	3	0.1	9.94	3151	950	0.015	8.49	1.47	16.99	0.533	0.1	1
TW27005308SB5009	30/06/2021	0.039	1	2.22	1935	3	0	9.7	305	31	0.009	9.87	1.79	17.21	0.505	0.1	0
TW27005308SB5010	30/06/2021	0.02	1	4.43	649	35	0.1	9.48	5	11	0.011	8.18	21.97	15.96	0.5	0.031	1.3
TW27005308SB5011	30/06/2021	0.01	1	1.72	43	36	0.1	10.36	1	2	0.007	8.22	22.72	15.2	0.5	0.09	0.3
TW27005308SB5012	30/06/2021	0.388	1	2.36	2420	43	0.5	8.97	2	5	0.007	8.2	27.84	14.86	0.5	0.1	1.9
TW27005308SB5013	30/06/2021	0.01	1	1	10	49	0	8.24	2	4	0.005	8.1	31.92	14.83	0.5	0.011	0
TW27005308SB5008	15/09/2021				15531	0		9.88	1785	440		8.19	0.2	16.64			0.2
TW27005308SB5009	15/09/2021				4884	2		9.53	226	66		8.05	0.85	16.67			0.1
TW27005308SB5010	15/09/2021				10462	36		8.43	1296	670		8.11	23.07	16.3			0.8
TW27005308SB5011	15/09/2021				10462	26		10.68	2755	690		7.97	15.94	14.9			1.3
TW27005308SB5012	15/09/2021				2613	14		11.56	275	170		8.11	8.1	15.62			0.1
TW27005308SB5013	15/09/2021				22	52		7.83	0	8		8.09	33.68	16.31			0.1
TW27005308SB5008	14/12/2021	0.01	1	7.38	461	0	0.6	14.22	46	5	0.01	8.53	0.23	5.25	0.62	0.303	1.79
TW27005308SB5009	14/12/2021	0.01	1	7.6	135	1	0.6	14.23	21	34	0.01	8.45	0.56	5.27	0.64	0.319	1.57
TW27005308SB5010	14/12/2021	0.036	2	5.27	921	19	0.7	12.9	48	11	0.01	7.73	10.99	6.25	0.69	0.331	2.13
TW27005308SB5011	14/12/2021	0.018	1	3.02	1046	4	1.2	14.93	119	85	0.01	8.15	1.98	7.12	1.18	1.09	4.61
TW27005308SB5012	14/12/2021	0.024	1	1.48	1986	4	1.6	14.09	102	29	0.01	8.17	0.57	7.52	1.61	1.47	1.24
TW27005308SB5013	14/12/2021	0.016	1	1.81	64	48	0	11.81	1	21	0.01	7.89	30.2	7.23	0.5	0.146	6.44