

Annual Environmental Report

2018



Sligo

D0014-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 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 are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER
No license specific reports included in AER	No

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant SLIGO WWTP with a Plant Capacity PE of 50000. The treatment process includes the following:

1.2.1 SLIGO WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening, Grit Removal
Primary Treatment	Yes	Primary Settlement Tank
Secondary Treatment	Yes	Oxidation Tank
Nutrient Removal	Yes	Ferric Dosing
Tertiary Treatment	No	

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 SLIGO WWTP

Compliance Status	
Were all parameters compliant for SLIGO WWTP treatment plant	Yes
Where noncompliant see table 2.2.1 for details of parameters	

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 WWTP.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
SLIGO WWTP	Cake Sludge	291.14	Weight (Tonnes)	20.8	Brendan Barry, Clonking, Abbeyleix
SLIGO WWTP	Cake Sludge	175.42	Weight (Tonnes)	20.4	Francis Connoll, Ballinasloe
SLIGO WWTP	Cake Sludge	491.12	Weight (Tonnes)	20.5	Niall McGrath, Wyestown
SLIGO WWTP	Cake Sludge	1401.34	Weight (Tonnes)	19.38	John Flynn
SLIGO WWTP	Cake Sludge	142.38	Weight (Tonnes)	19.5	Seamus McCabe, Baileborough, Co. Cavan
SLIGO WWTP	Cake Sludge	193	Weight (Tonnes)	19.7	Tony & Philip Brady, Kildalkey, Co. Meath
SLIGO WWTP	Cake Sludge	432.72	Weight (Tonnes)	18.8	Austin Colton, Ballinagar, Tullamore

Annual Statement of Measures

There were no major capital or operational changes undertaken.

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 - SLIGO WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr mg/l	38	484	180.59
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	38	215	67.64
Suspended Solids mg/l	38	300	93.31
Total Nitrogen mg/l	15	69	20.32
Total Phosphorus (as P) mg/l	38	6.8	1.84
Hydraulic Capacity	0	56216	18127

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. 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.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - SLIGO WWTP

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)
Total Phosphorus (as P) mg/l	2	2.4	0	36	0	0	0.49	Pass
Temperature °C	25	0	0	38	0	0	10.33	Pass
COD-Cr mg/l	125	250	0	38	1	0	38.34	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	0	21	0	0	4.38	Pass
Total Nitrogen mg/l	0	0	0	7	0	0	5.97	Pass
ortho-Phosphate (as P) - unspecified mg/l	0	0	0	29	0	0	1.03	Pass
pH pH units	0	0	0	38	0	0	7.3	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	38	0	0	5.91	Pass
Nitrite (as N) mg/l	0	0	0	8	0	0	0.54	Pass

Faecal coliforms no./100mls	0	0	0	28	0	0	1048.17	Pass
Dissolved Oxygen mg/l	70	0	0	8	0	0	10.05	Pass
Nitrate (as N) mg/l	0	0	0	8	0	0	2.38	Pass
Dissolved Oxygen % O2	0	0	0	1	0	0	65	Pass
Ammonia-Total (as N) mg/l	10	12	0	23	0	0	2.57	Pass
Conductivity 20 C μS/cm	0	0	0	8	0	0	966.76	Pass
Suspended Solids mg/l	35	87.5	0	38	0	0	9.01	Pass

Notes:

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

2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

Not Applicable

Significance of Results:

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

2.3 Ambient monitoring summary

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.

2.3.1 Ambient Monitoring Report Summary - SLIGO 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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	167889, 337373	TPEFF2700D0014SW001	No	No	No	Yes	Good
Downstream	167889, 337373	TPEFF2700D0014SW001	No	No	No	Yes	Good
Downstream	167889, 337373	TPEFF2700D0014SW001	No	No	No	Yes	Good
Downstream	167889, 337373	TPEFF2700D0014SW001	No	No	No	Yes	Good
Downstream	167889, 337373	TPEFF2700D0014SW001	No	No	No	Yes	Good

2.3.2 Ambient Monitoring Parameter Summary - SLIGO WWTP

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

The discharge from the wastewater treatment plant do not have an observable negative impact on the Water Framework Directive status.

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 - SLIGO WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
cBOD	474267.05	37966.43	91.99	
SS	654290.61	57909.07	91.15	
TP	12910.42	3181.13	75.36	
TN	142551.14	36737.7	74.23	
COD	1266256.47	246420.8	80.54	

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.

SLIGO WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	37500
DWF to the Treatment Plant (m3/day)	12500
Current Hydraulic Loading - annual max (m3/day)	56216
Average Hydraulic loading to the Treatment Plant (m3/day)	18127
Organic Capacity (PE) - As Constructed	50000
Organic Capacity (PE) - Collected Load (peak week)	25741
Organic Capacity (PE) - Remaining	24259
Will the capacity be exceeded in the next three years? (Yes/No)	No

3.3 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
9	Blocked Sewer	0	9

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. 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

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
There is no Incident data included in the AER.				

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	0
Number of Incidents reported to the EPA via EDEN in 2018	0

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	11608.18	Weight (Tonnes)		100	Yes	Yes	Yes

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:

No Appendix Included

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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
(P)SW1	168437, 336785	Yes	Unknown	Not yet Assessed			Not Monitored
SW2	168467, 336877	Yes	Unknown	Not yet Assessed			Not Monitored
SW3	168981, 336273	Yes	Medium	Meeting	8		Not Monitored
SW4	169678, 335970	Yes	Medium	Meeting	7		Not Monitored
SW5	169351, 335978	Yes	Low	Meeting	5		Not Monitored
SWA	167889, 337373	Yes	High	Meeting	73		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 (m3)	Monitoring Status
SWB	168437, 336785	Yes	High	Meeting	130		Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	873501
Is each SWO identified as non meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / charges 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.

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
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	Improvement Source	Expected Completion Date	Comments
There are no Improvements Programmes 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.

5.1.1 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 (e.g. Appendix X).
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
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	
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	No
List reason e.g. changes to monitoring requirements	
Have these processes commenced?	
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	NA

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

Signed:

Date: 12/03/2019

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

Appendix

Appendix 7.1 - Ambient monitoring summary

Data/Statistics - 2018

Result Not Accredited

Entity	Entity Code	Station	Station Code	Sample Code	Sample Reason	Sample Date	Ammonia N mg/l	BOD, 5 days with Inhibition (Carbonaceous) mg/l	Chlorophyll µg/l	Coliform Bacteria MPN/100mls	Conductivity @ 20°C µS/cm	Dissolved Inorganic Nitrogen DIN mg/l	Dissolved Oxygen mg/l	E Coli no./100 mls	Enterococci cfu/100mls	Ortho- Phosphate PO4-P mg/l	pH
Garavogue Estuary	5308	Beyond Deep Water Quay #5	TW27005308SB5010	SMDAMB13031805a	Compliance	13/03/2018					10	12.47	71	29			7.98
Garavogue Estuary	5308	Beyond Deep Water Quay #5	TW27005308SB5010	SMDAMB06061805a	Compliance	06/06/2018	0.374	2	5.54		28	0.5	9.64	8464	104	0.006	8.48
Garavogue Estuary	5308	Beyond Deep Water Quay #5	TW27005308SB5010	SMDAMB19091805a	Compliance	19/09/2018					20	10.44	24200	4900			8
Garavogue Estuary	5308	Beyond Deep Water Quay #5	TW27005308SB5010	SMDAMB05121805a	Compliance	05/12/2018	0.101	2.7	3.03		6	0.4	10.55	161	16	0.033	7.9
Garavogue Estuary	5308	Cregg Out #6	TW27005308SB5011	SMDAMB13031806a	Compliance	13/03/2018					28	11.88	9804	1000			7.91
Garavogue Estuary	5308	Cregg Out #6	TW27005308SB5011	SMDAMB06061806a	Compliance	06/06/2018	0.038	2	4.4		37	0.1	10.06	10	1	< 0.005	8.52
Garavogue Estuary	5308	Cregg Out #6	TW27005308SB5011	SMDAMB19091806a	Compliance	19/09/2018					23	9.57	10462	300			8.19
Garavogue Estuary	5308	Cregg Out #6	TW27005308SB5011	SMDAMB05121806a	Compliance	05/12/2018	0.077	2.1	2.56		7	1.2	10.34	1565	7	0.027	8.07
Garavogue	35G01	Crozon Promenade #1	RS35G010180	SMDAMB13031801	Compliance	13/03/2018				28	0	12.11	5	40			8.22
Garavogue	35G01	Crozon Promenade #1	RS35G010180	SMDAMB06061801	Compliance	06/06/2018	0.051	2	3.8	2359	0	0.2	9.28	134	0	0.009	8.51
Garavogue	35G01	Crozon Promenade #1	RS35G010180	SMDAMB19091801	Compliance	19/09/2018				80	0	10.04	770	44			8.34
Garavogue	35G01	Crozon Promenade #1	RS35G010180	SMDAMB05121801	Compliance	05/12/2018	0.01	3.1	2.86	51	0	0.3	10.4	6	1	0.013	7.88
Garavogue Estuary	5308	Custom House Quay #3	TW27005308SB5008	SMDAMB13031803a	Compliance	13/03/2018					29	12.51	10	3			8.39
Garavogue Estuary	5308	Custom House Quay #3	TW27005308SB5008	SMDAMB06061803a	Compliance	06/06/2018	0.026	2	2.67		8	0.2	10.08	246	6	0.007	8.59
Garavogue Estuary	5308	Custom House Quay #3	TW27005308SB5008	SMDAMB19091803a	Compliance	19/09/2018					0	10.13	11199	410			8.38
Garavogue Estuary	5308	Custom House Quay #3	TW27005308SB5008	SMDAMB05121803a	Compliance	05/12/2018	0.018	2	2.89		0	0.3	10.94	167	0	0.014	8.13
Garavogue Estuary	5308	Hughes Bridge #4	TW27005308SB5009	SMDAMB13031804a	Compliance	13/03/2018					0	12.34	326	37			8.35
Garavogue Estuary	5308	Hughes Bridge #4	TW27005308SB5009	SMDAMB06061804a	Compliance	06/06/2018	0.039	2	3.6		6	0.2	10.69	631	12	0.008	8.77
Garavogue Estuary	5308	Hughes Bridge #4	TW27005308SB5009	SMDAMB19091804a	Compliance	19/09/2018					0	10.04	8664	280			8.39
Garavogue Estuary	5308	Hughes Bridge #4	TW27005308SB5009	SMDAMB05121804a	Compliance	05/12/2018	0.017	2	3.33		1	0.4	10.7	1565	60	0.021	8.22
Garavogue	35G01	Kempton Promenade #2	RS35G010230	SMDAMB13031802	Compliance	13/03/2018				157	0	12.25	2	6			8.17
Garavogue	35G01	Kempton Promenade #2	RS35G010230	SMDAMB06061802	Compliance	06/06/2018	0.038	2	4	1467	0	0.2	9.58	85	18	0.007	8.76
Garavogue	35G01	Kempton Promenade #2	RS35G010230	SMDAMB19091802	Compliance	19/09/2018				47	0	10.06	687	40			8.46
Garavogue	35G01	Kempton Promenade #2	RS35G010230	SMDAMB05121802	Compliance	05/12/2018	0.01	2	2.86	43	0	0.3	10.65	9	1	0.013	8.04
Garavogue Estuary	5308	Knappagh Out #7	TW27005308SB5012	SMDAMB13031807a	Compliance	13/03/2018					14	12.26	57	55			7.94
Garavogue Estuary	5308	Knappagh Out #7	TW27005308SB5012	SMDAMB06061807a	Compliance	06/06/2018	0.037	2	4.9		35	0.2	9.96	112	9	0.006	8.48
Garavogue Estuary	5308	Knappagh Out #7	TW27005308SB5012	SMDAMB19091807a	Compliance	19/09/2018					20	10.06	9208	450			8.3
Garavogue Estuary	5308	Knappagh Out #7	TW27005308SB5012	SMDAMB05121807a	Compliance	05/12/2018	0.076	2	2.47		11	1.2	9.19	84	280	0.02	7.84
Garavogue Estuary	5308	Rosses Point Slipway #8	TW27005308SB5013	SMDAMB13031808a	Compliance	13/03/2018					43	10.63	13	13			7.91
Garavogue Estuary	5308	Rosses Point Slipway #8	TW27005308SB5013	SMDAMB06061808a	Compliance	06/06/2018	0.053	2	1.58		50	0.1	9.51	677	18	0.006	8.38
Garavogue Estuary	5308	Rosses Point Slipway #8	TW27005308SB5013	SMDAMB19091808a	Compliance	19/09/2018					49	8.56	73	11			8.03
Garavogue Estuary	5308	Rosses Point Slipway #8	TW27005308SB5013	SMDAMB05121808a	Compliance	05/12/2018	0.045	2.3	1.85		42	0.2	9.05	12	38	0.019	7.93

Salinity	Temperature	Total Nitrogen N	Total Oxidised Nitrogen N	Turbidity
ppt	Degrees C	mg/l	mg/l	NTU
5.8	6.36			
17.29	21.27	0.613	0.098	
12.14	14.17			
3.38	7.59	0.969	0.296	
17.29	6.95			
23.7	20.77	0.193	0.029	
14.07	14.34			
3.66	8.62	1.52	1.14	
0	5.44			4.9
0	22.74	0.453	0.144	0
0	14.48			0
0	7.51	0.647	0.326	2.6
0	5.39			
4.59	22.57	0.374	0.131	
0.8	14.35			
0	7.63	0.69	0.315	
0	5.46			
3.58	22	0.409	0.135	
1.61	14.62			
0	7.81	0.95	0.356	
0	5.26			2.2
0	22.48	0.412	0.148	0
0	14.61			1.1
0	7.63	0.397	0.32	3.3
8.13	8.27			
21.3	20.11	0.332	0.099	
12.1	14.36			
6.43	10.04	1.23	1.13	
27.84	7.31			
32.48	18.56	0.099	0.015	
32.19	14.34			
26.68	8.05	0.579	0.172	