

Annual Environmental Report

2018



Loughrea

D0194-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0194-01, Loughrea, in Galway 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 Licence Specific report is included in this AER	NA

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Loughrea WWTP with a Plant Capacity PE of 9500. The treatment process includes the following:

1.2.1 Loughrea WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	screening and grit removal
Primary Treatment	No	
Secondary Treatment	Yes	Extended Aeration and Final Settlement
Nutrient Removal	Yes	Chemical dosing for Phosphorus Removal
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 Loughrea WWTP

Compliance Status	
Were all parameters compliant for Loughrea 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 treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
Loughrea WWTP	Dried Sludge	1.91	Weight (Tonnes)	13.4	H&L Environmental Services Ltd., Derryville, Moyne, Thurles, Co.Tipperary.
Loughrea WWTP	Dried Sludge	4.89	Weight (Tonnes)	13.4	Gary Walsh Lands, Cregmore, Claregalway, Co.Galway.
Loughrea WWTP	Dried Sludge	2.66	Weight (Tonnes)	13.4	James Keane Lands, Turla, Ballymoe, Co.Galway.
Loughrea WWTP	Dried Sludge	28.54	Weight (Tonnes)	13.4	Roscommon AD, Tibohine, Ballaghadeereen, Co. Roscommon.

Annual Statement of Measures

There were no major capital or operational changes undertaken for 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 - Loughrea WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	1046	334.14
COD-Cr mg/l	12	2752	1032.53
Total Phosphorus (as P) mg/l	1	4.1	4.1
Suspended Solids mg/l	12	1070	405.65
Hydraulic Capacity	0	7364	3424

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 - Loughrea 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 exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	12	2	0	6.37	Pass
Suspended Solids mg/l	25	62.5	0	12	1	0	9.36	Pass
pH pH units	0	0	0	12	0	0	7.27	Pass
ortho-Phosphate (as P) - unspecified mg/l	0	0	0	12	0	0	0.95	Pass
Ammonia-Total (as N) mg/l	0	0	0	12	0	0	3.73	Pass
COD-Cr mg/l	125	250	0	12	0	0	36.2	Pass
Total Phosphorus (as P) mg/l	0	0	0	2	0	0	1.49	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 - Loughrea 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	162239, 217796	TPEFF1200D0194SW001	No	No	No	No	Unassigned
Downstream	158001, 219745	TPEFF1200D0194SW001	No	No	No	No	Poor

2.3.2 Ambient Monitoring Parameter Summary - Loughrea WWTP

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 (Total) mg/l	RS29K010100	1.63	RS29K010200	3.03	2.6	53.8
Conductivity @25°C µS/cm	RS29K010100	392.6	RS29K010200	593.2		
Ammonia-Total (as N) mg/l	RS29K010100	0.04	RS29K010200	0.21	0.14	124.7
Nitrite (as N) µg/l	RS29K010100	6.52	RS29K010200	41.52		
Temperature °C	RS29K010100	11.32	RS29K010200	11.34		
Chloride mg/l	RS29K010100	19.06	RS29K010200	27.16		
ortho-Phosphate (as P) - unspecified mg/l	RS29K010100	0.02	RS29K010200	0.37	0.08	463.7
pH pH units	RS29K010100	7.97	RS29K010200	7.88		
Dissolved Oxygen mg/l	RS29K010100	8.16	RS29K010200	9.32		
Dissolved Oxygen % Saturation	RS29K010100	74.6	RS29K010200	84.2		
Alkalinity-total (as CaCO3) mg/l	RS29K010100	160.4	RS29K010200	246.6		

Total Oxidised Nitrogen (as N) mg/l	RS29K010100	0.38	RS29K010200	2.18		
Suspended Solids mg/l	RS29K010100	4.13	RS29K010200	10		
Total Hardness (as CaCO3) mg/l	RS29K010100	184.6	RS29K010200	284.4		
Nitrate (as N) mg/l	RS29K010100	0.37	RS29K010200	2.14		
True Colour mg/litre Pt Co	RS29K010100	9.2	RS29K010200	16.8		

Significance of Results:

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

The discharge from the works may be giving rise to a breach of EQS in the receiving water regardless of status.

The parameters which exceeded the EQS and may be causing an impact are: Ammonia & Ortho Phosphate.

Any other know impacts: Unknown

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 - Loughrea WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
SS	456257.12	11450.81	97.49	
TP	3681.39	2719.65	26.12	
COD	1161334.22	44290.07	96.19	
TN				
cBOD	375826.39	7789.75	97.93	

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.

Loughrea WWTP	
Peak Hydraulic Capacity (m ³ /day) - As Constructed	6000
DWF to the Treatment Plant (m ³ /day)	2000
Current Hydraulic Loading - annual max (m ³ /day)	7364
Average Hydraulic loading to the Treatment Plant (m ³ /day)	3424
Organic Capacity (PE) - As Constructed	9500
Organic Capacity (PE) - Collected Load (peak week)	7085
Organic Capacity (PE) - Remaining	2415
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
10	Blocked Sewer	0	10

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)
Other	WWTP biological sludge issue	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	2
Number of Incidents reported to the EPA via EDEN in 2018	2

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)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

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
SW002	162321, 216920	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW003	162238, 218609	Yes	Unknown	Not yet Assessed	Unknown	141457	Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m ³)?	141457
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?	No
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
Complete improvements to comply with ELVs specified in Schedule A. Implement, requirements in accordance with Condition 5.6.1.	C	31/12/2019	No	Not Started	Unknown	The Condition 5 Assessment will be completed by Q4 2019
Improvement works to ensure compliance with Condition 1.7	C	31/12/2019	No	Not Started	Unknown	The improvement programme will be reviewed by Irish Water for works required to comply with the licence condition on a prioritised basis.

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
D0194-IP:47	Modify air main and include RTC, actuated valves, pressure switch, and additional DO probe	Improved Operational Control	7/1/2018	100% complete - mid 2018
D0194-IP:48	Enable DO control on FBDA system, to reduce foaming and realise energy savings	Improved Operational Control	7/1/2018	100% complete - mid 2018

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
D0194-IP:49	Replace Diffuser discs in Aeration Tank No. 1	Improved Operational Control	7/1/2018	100% complete - Mid 2018
D0194-IP:50	Refurbishment of inlet screens	Improved Operational Control	6/1/2019	One screen complete, second screen to be completed , therefore 50% complete
D0194-IP:51	Cleaning and CCTV of Gort Road WWPS Catchment	Incident Reduction	3/30/2018	100% complete

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 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).
Priority Substances Assessment	Yes	2015	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	NA
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	NA
Have these processes commenced?	NA
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: 29/03/2019

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 – pH Monitoring Data

Loughrea WWTP - Additional Effluent pH readings

Taken at the plant by the plant operator

Number of Additional pH readings in 2018	Average pH of these readings	Max pH	Min pH
361	6.72	7.24	6.25