Annual Environmental Report

2022

Athlone

D0007-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 AER

This Annual Environmental Report has been prepared for D0007-01, Athlone, in Westmeath 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 were no capital works, significant changes or operational changes undertaken in 2022.

1.2 TREATMENT SUMMARY

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

- Athlone WWTP with a Plant Capacity PE of 36000, 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
TPEFF3200D0007SW001	Athlone 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 ATHLONE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - ATHLONE 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
COD-Cr mg/l	15	566	235
ortho-Phosphate (as P) - unspecified mg/l	14	3.58	1.60
Suspended Solids mg/l	15	453	81
pH pH units	15	7.20	6.98
Total Phosphorus (as P) mg/l	15	6.19	2.78
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	15	264	77
Total Nitrogen mg/l	15	56	22
Ammonia-Total (as N) mg/l	15	35	18
Hydraulic Capacity	N/A	20392	10096

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 - TPEFF3200D0007SW001

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	15	N/A	N/A	38	Pass
Suspended Solids mg/l	35	87.5	N/A	15	N/A	N/A	8.53	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	15	N/A	N/A	4.32	Pass
pH pH units	6	9	N/A	15	N/A	N/A	7.07	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	15	N/A	N/A	0.079	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	15	N/A	N/A	0.437	Pass
Total Nitrogen mg/l	N/A	N/A	N/A	15	N/A	N/A	12	
Nitrite (as N) mg/l	N/A	N/A	N/A	15	N/A	N/A	0.298	

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)
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	15	N/A	N/A	0.270	
Conductivity @20°C µS/cm	N/A	N/A	N/A	15	N/A	N/A	557	
Nitrate (as N) mg/l	N/A	N/A	N/A	15	N/A	N/A	8.91	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	15	N/A	N/A	9.20	

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 TPEFF3200D0007SW001

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	204112, 240975	RS26S021706	No	No	No	No	Poor
Downstream	204008, 240237	RS26S021725	No	Yes	No	No	Poor*

**It should be noted that Irish Waste is unable to access the downstream sampling location as prescribed under Schedule B.3 Ambient Monitoring. The lands adjacent to all the sample locations are underwater for at least a period of 6-8 months of the year. Westmeath County Council/Irish Water are in the process of selecting a suitable alternative downstream monitoring point.*

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

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

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - ATHLONE WWTP

2.1.4.1 Treatment Efficiency Report - Athlone 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)
cBOD	281094	17592	94
TN	82322	47847	42
SS	297219	34766	88
COD	862915	152921	82
TP	10205	1779	83

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

2.1.4.2 Treatment Capacity Report Summary - Athlone 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.

Athlone WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	20250
DWF to the Treatment Plant (m^3/day)	6750
Current Hydraulic Loading - annual max (m^3/day)	20392

Athlone WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	10096
Organic Capacity (PE) - As Constructed	36000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	21882
Organic Capacity (PE) - Remaining	14118
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 - ATHLONE 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)
Landfill Leachate (delivered by tanker)	3646	Volume (m3)	44.4	0.1	Yes	Yes	Yes
Waterworks Sludge	6912	Volume (m3)	84	0.18	Yes	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
2	Discharge to waters	0	2

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 Uisce Éireann 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)
Uncontrolled release	Network Infrastructure	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2022	1
Number of Incidents reported to the EPA via EDEN in 2022	1
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 2022 (No. of events)	Total volume discharged in 2022 (m^3)	Monitoring Status
S.O.15	204040,240941	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
S.O.11	203477,242023	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
S014	203564,242099	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
S.0.18	204791,241007	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
S.0.16	204640,241085	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
S.0.17	204640,241085	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
S.0.2	204640,241085	Yes	Medium Significance	Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m^3)	Monitoring Status
S04	204022,242676	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
S.0.6	202670,241883	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW019	TBC,TBC	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
S.O.7	203984,241226	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
SW003	203862,241660	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
S.O.1	204191,241059	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
S.O.13	203861,241662	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
S.O.12	203902,241098	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
S.O.8	203631,240857	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW009	203202,241788	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW010	203126,241986	Yes	Medium Significance	Meeting Criteria	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 2022 (No. of events)	Total volume discharged in 2022 (m^3)	Monitoring Status
SW005	203685,242668	Yes	Medium Significance	Meeting Criteria	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 monitored SWOs in the agglomeration in the year (m^3)?	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 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
D0007-SIP:01	Installation of Abbey Road to Golden Island tunnel sewer	C	31/05/2011	Yes	At Planning Stage	2025	
D0007-SIP:02	Installation of new Coosan pumping station and installation of new rising main and new sewer to Abbey Road	C	31/05/2011	Yes	At Planning Stage	2025	
D0007-SIP:03	Installation of storm water storage tank at Golden Island pumping station and associated rising main to WWTP	C	31/05/2011	Yes	At Planning Stage	2025	
D0007-SIP:04	Rehabilitation of sewers including installation of Roslevin Lawns surface water culvert , completion of A1 river improvement scheme and installation of Retreat Road surface water sewer	C	31/12/2014	Yes	At Planning Stage	2025	

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
D0007-SIP:05	SW019 (204156E, 241041N) (formerly S.O.1)	C	31/05/2011	Yes	At Planning Stage	2025	
D0007-SIP:06	Discharge to discontinue: SW010, Location 203111E 241984N (Athlone Canal)	A	30/11/2011	Yes	At Planning Stage	2025	
D0007-SIP:07	Discharge to discontinue: SW014, Location 203716E 242200N (River Shannon)	A	30/11/2011	Yes	At Planning Stage	2025	
D0007-SIP:08	SW015 (204040E, 240941N) formerly (S.O.15)	C	30/11/2011	Yes	At Planning Stage	2025	
D0007-SIP:09	Discharge to discontinue: SW003, Location - 203943E 241685N (River Shannon)	A	31/05/2011	Yes	At Planning Stage	2025	
D0007-SIP:10	Discharge to discontinue: SW004, Location - 204328E 242628N (River Shannon)	A	31/05/2011	Yes	At Planning Stage	2025	
D0007-SIP:11	Discharge to discontinue: SW005, Location 203685E 242655N (River Shannon)	A	31/05/2011	Yes	At Planning Stage	2025	
D0007-SIP:12	SW007 (203984E, 241226N) formerly S.O.7	C	30/11/2011	Yes	At Planning Stage	2025	
D0007-SIP:13	Discharge to discontinue: SW009, Location 203198E 241781N (Athlone Canal)	A	30/11/2011	Yes	At Planning Stage	2025	

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
D0007-SIP:14	Upgrade and replacement of West Bank, West Side, Canal and Siphon sewers, upgrade of sewer connection to Golden Island pumping station and installation of sewer across The Meadows	C	30/11/2011	Yes	At Planning Stage	2025	
D0007-SIP:16	Upgrade of Golden Island pumping station	C	31/12/2014	Yes	At Planning Stage	2025	
D0007-SIP:17	Upgrade of WWTP and ancillary works	C	31/12/2014	Yes	Works Completed		

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
Drinking Water Abstraction Point Risk Assessment	Yes	2010	No
Priority Substances Assessment	Yes	2010	No
Toxicity of Final Effluent	Yes	2010	No
Toxicity/Leachate Management	Yes	2010	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?	N/A
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	Yes
List reason e.g. changes to monitoring requirements	Ambient Monitoring Location Changes
Have these processes commenced?	No
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:

Date: 04/05/2023

This AER has been produced by Uisce Éireann'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

Athlone 2022 Ambient Monitoring Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)				Current WFD Status
			Bathing Water	Drinking Water	FWPM	Shellfish	
Upstream Monitoring Point	204112, 240975	RS26S021706	No	No	No	No	Poor
Downstream Monitoring Point	204008, 240237	RS26S021725	No	Yes	No	No	Poor

*It should be noted that Uisce Eireann is unable to access the downstream sampling location as prescribed under Schedule B.3 Ambient Monitoring. The lands adjacent to all the sample locations are underwater for at least a period of 6-8 months of the year. Westmeath County Council/Uisce Eireann are in the process of selecting a suitable alternative downstream monitoring point.

2022 Athlone Ambient Monitoring Data

Upstream Results												
Date		Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	D.O (% Sat)	D.O (mg/l)	pH (pH Units)	Temperature (°C)	Conductivity (µS/m)	Total Phosphorus (mg/l)	Total Nitrogen (mg/l)	COD (mg/l)
12/01/2022	U/S	< 0.05	< 0.05	< 1	90.3	11.56	7.6	6	309.8	< 0.1	1.63	< 8
09/02/2022	U/S	< 0.05	< 0.05	< 1	94	11.55	7.7	6.9	338.7	< 0.2	2.6	52
01/03/2022	U/S	< 0.05	< 0.05	< 1	91.4	11.35	8	6.8	323.8	< 0.2	< 2.5	56
13/04/2022	U/S	< 0.05	< 0.05	1	109	12.3	7.6	13.1	296	< 0.2	1.83	26
25/05/2022	U/S	< 0.05	< 0.05	2.1	116.4	11.6	8	15.2	328.6	< 0.2	1.1	25
08/06/2022	U/S	0.05	< 0.05	3.2	104.8	9.77	7.9	17.8	349.8	< 0.2	1.59	< 8
18/07/2022	U/S	< 0.05	< 0.05	< 1	94.7	9.05	7.4	17.5	326.9	< 0.2	1.1	10
08/08/2022	U/S	< 0.05	< 0.05	1.3			8		326.6	< 0.2	< 1	23
10/08/2022	U/S	< 0.05	< 0.05	1.1	95.5	8.74	7.8	19.9	316.2	< 0.2	1.45	19
15/08/2022	U/S	< 0.05	< 0.05	1.6			7.5		309.5	< 0.2	< 1	24
07/09/2022	U/S	< 0.05	< 0.05	1.4	101.4	9.37	7.9	17.6	328.5	< 0.2	1.35	15
05/10/2022	U/S	0.05	< 0.05	1	97.7	9.73	8	14.7	304.1	< 0.2	1.02	18
02/11/2022	U/S	0.05	< 0.05	2.3	84	9.06	7.4	10.9	285.8	< 0.2	< 1	29
07/12/2022	U/S	< 0.05	< 0.05	< 1	103.2	11.55	7.9	10.6	317.3	< 0.2	1.2	30
Mean		**0.038**	**0.035**	**1.324**	**98.5**	**10.47**	**7.76**	**13.08**	**318.69**	**0.14**	**1.34**	**24.17**
95%ile		**0.050**	**0.035**	**2.615**	**112.3**	**11.92**	**8.00**	**18.75**	**342.59**	**0.14**	**2.10**	**53.40**

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of LOD/sqrt(2) was used in calculating the mean and 95%ile concentrations.