Annual Environmental Report

2023

Uisce Éireann
Irish Water

Athy

D0003-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0003-01, Athy, in Kildare 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 2023.

1.2 TREATMENT SUMMARY

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

- Athy WWTP with a Plant Capacity PE of 15000, 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
TPEFF1400D0003SW001	Athy 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 ATHY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - ATHY 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 Phosphorus (as P) mg/l	12	5.72	4.17
Suspended Solids mg/l	12	325	169
Total Nitrogen mg/l	12	42	31
Ammonia-Total (as N) mg/l	12	32	19
COD-Cr mg/l	12	619	359
BOD, 5 days with Inhibition (Carbonaceous) mg/l	12	230	145
Hydraulic Capacity	N/A	11100	5678

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 - TPEFF1400D0003SW001

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	12	N/A	N/A	35	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	12	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	15	30	N/A	12	N/A	N/A	4.05	Pass
pH pH units *	6	9	N/A	11	N/A	N/A	7.27	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	N/A	N/A	0.336	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	12	N/A	N/A	0.673	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	N/A	N/A	0.438	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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Nitrite (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.270	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	8	N/A	N/A	20	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	20	
Nitrate (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	19	

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

* Only 11 pH samples were taken in 2023.

No FOG samples taken in 2023

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 TPEFF1400D0003SW001

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	268384, 192811	RS14B011740	No	No	No	No	Poor
Downstream	268357, 192710	RS14B011760	No	No	No	No	Poor

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 do not meet the required EQS at the upstream and the downstream monitoring locations. 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.

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 - ATHY WWTP

2.1.4.1 Treatment Efficiency Report - Athy 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	8975	1723	81
cBOD	294631	10735	96
SS	363963	29942	92
COD	730896	91514	87
TN	66454	50165	25

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

2.1.4.2 Treatment Capacity Report Summary - Athy 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.

Athy WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	10500
DWF to the Treatment Plant (m^3/day)	3500
Current Hydraulic Loading - annual max (m^3/day)	11100
Average Hydraulic loading to the Treatment Plant (m^3/day)	5678
Organic Capacity (PE) - As Constructed	15000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	13034
Organic Capacity (PE) - Remaining	1966
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 - ATHY 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	2743	Volume (m^3)	33.4	0.13	Yes	Yes	Yes
Industrial / Commercial Sludge	2043	Volume (m^3)	24.89	0.1	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
There were no relevant environmental complaints in 2023.			

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	Recurring (Y/N)	Closed (Y/N)
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	1
Number of Incidents reported to the EPA via EDEN in 2023	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 2023 (No. of events)	Total volume discharged in 2023 (m3)	Monitoring Status
SW2	268361,192793	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW3	268206,193815	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW4	268245,194137	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW5	268246,193923	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW6	268243,193817	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	-,-	Yes	-	Not yet Assessed	Unknown	Unknown	TBC

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 wastewater discharge by metered SWOs during 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
D0003-SIP:01	Monitoring of discharge frequency and volume from storm water holding tank at the WWTP	C	31/07/2010	Yes	Works Completed		
D0003-SIP:02	New trunk sewer to serve development land to SE of Athy Town	C	31/12/2020	No	Not Started		DAP commenced. Stage 1 completion scheduled for 2023
D0003-SIP:03	Upgrading of sewer network to ensure SWO's comply with the criteria outlined in DoEHLG	C	31/12/2020	No	At Planning Stage		
D0003-SIP:04	Wastewater sewer network rehabilitation - East (Stage 1) to improve primary discharge	C	31/07/2010	Yes	Works Completed		
D0003-SIP:05	Wastewater sewer network rehabilitation - East (Stage 1) to improve SWOs	C	31/07/2010	Yes	Works Completed		
D0003-SIP:06	Wastewater sewer network rehabilitation – West (Stage 2) to improve primary discharge	C	31/01/2011	Yes	Not Started		DAP commenced. Stage 1 completion scheduled for 2023

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
D0003-SIP:07	Wastewater sewer network rehabilitation – West (Stage 2) to improve SWOs	C	31/01/2011	Yes	Not Started		DAP commenced. Stage 1 completion scheduled for 2023

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	Included in this AER
There is no Licence Specific Report Required in this AER Annual Review.		

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	N/A

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

Date: 07/11/2024

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

Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient Monitoring Summary

Athy Ambient Monitoring Summary 2023

			Receiving Waters Designation (Yes/No)					Mean (mg/l)		
Ambient Monitoring Point from WWDL (or as agreed with EPA)	**Irish National Grid Reference (Easting, Northing)**	**EPA Feature Coding Tool code**	**Bathing Water**	**Drinking Water**	**FWPM**	**Shellfish**	**Current WFD Status**	**cBOD**	**o-Phosphate (as P)**	**Ammonia (as N)**
Upstream Monitoring Point	268384, 192811	RS14B011740	No	No	No	No	Poor	2.417	0.142	0.203
Downstream Monitoring Point	268357, 192710	RS14B011760	No	No	No	No	Poor	2.250	0.077	0.187
Difference								*-0.167*	*-0.065*	*-0.017*
EQS								1.500	0.035	0.065
% of EQS								-11.11%	-186.67%	-25.64%

Athy Ambient Monitoring Summary 2023

Upstream Results									
Station Name	Sample Date	Temperature oC	pH pH units	BOD mg/ l	Total Nitrogen mg/l	Ammonia mg/l	Ortho-Phosphate mg/l	DO % sat	DO mg/l
Upstream	11/01/2023	8.3	7.5	3	4.37	0.43	0.222	80.7	9.47
Upstream	16/02/2023	10.9	7.83	2	4.2	0.18	0.06	82.8	9.37
Upstream	09/03/2023	7.8	7.85	3	5.22	0.15	0.6	88.5	10.24
Upstream	12/04/2023	8.9	7.71	2	4.54	0.21	0.08	82.6	9.25
Upstream	09/05/2023		7.49	2	3.13	0.64	0.08		
Upstream	02/06/2023	20.7		4	4.84	0.1	0.05	106.8	9.68
Upstream	07/07/2023	17.9	7.5	4	3.35	0.04	0.11	89.5	8.41
Upstream	04/08/2023	18.9	7.2	4	2.58	0.03	0.09	80.9	7.57
Upstream	13/09/2023	14.8	8	1	3.39	0.05	0.08	81.7	8.34
Upstream	06/10/2023	16.1	7.5	2	3.68	0.04	0.16		8.07
Upstream	01/112023	11.8	8.03	1	4.1	0.34	0.09		9.65
Upstream	04/12/2023	9.2	7.99	1	5.24	0.23	0.08		11.22
Mean		**13.21**	**7.69**	**2.42**	**4.05**	**0.203**	**0.142**	**86.69**	**9.21**
95%ile		**19.80**	**8.02**	**4.00**	**5.23**	**0.525**	**0.392**	**100.75**	**10.73**

Downstream Results									
Station Name	Sample Date	Temperature oC	pH pH units	BOD mg/ l	Total Nitrogen mg/l	Ammonia mg/l	Ortho-Phosphate mg/l	DO % sat	DO mg/l
Downstream	11/01/2023	8.2	7.56	2	4.37	0.38	0.228	9.24	79.5
Downstream	16/02/2023	9.5	7.87	1	5.27	0.14	0.05	9.69	84.9
Downstream	09/03/2023	8.3	7.83	2	5.42	0.11	0.1	9.81	85.8
Downstream	12/04/2023	8	7.78	2	3.68	0.16	0.08	93.5	
Downstream	09/05/2023		7.59	2	3.41	0.54	0.06		
Downstream	02/06/2023	18.5		4	5.12	0.18	0.03	7.98	84.3
Downstream	07/07/2023	18.2	7.5	2	3.82	0.03	0.02	9.02	96.6
Downstream	04/08/2023	16.2	7.4	5	2.52	0.02	0.09	7.56	76.3
Downstream	13/09/2023	18.4	8	3	3.82	0.01	0.03	8.55	84.6
Downstream	06/10/2023	14.7	7.6	1	3.82	0.06	0.11	7.76	
Downstream	01/11/2023	11.9	8.01	1	4.13	0.37	0.07	9.66	
Downstream	04/12/2023	9.3	8.09	2	5.56	0.24	0.05	11.2	
Mean		**12.84**	**7.75**	**2.25**	**4.25**	**0.187**	**0.077**	**16.72**	**84.57**
95%ile		**18.45**	**8.05**	**4.45**	**5.48**	**0.452**	**0.163**	**52.35**	**93.36**

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.