Annual Environmental Report

2019

Mullingar

D0008-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0008-01, Mullingar, 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 improvements undertaken this year.

1.2 TREATMENT SUMMARY

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

- Mullingar WWTP with a Plant Capacity PE of 55000, the treatment type is 3NP - Tertiary N&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
TPEFF3200D0008SW001	Mullingar WWTP	Treated	Non-Compliant	ortho-Phosphate (as P) - unspecified mg/l

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 MULLINGAR WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MULLINGAR 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	6.2	3.36
Total Nitrogen mg/l	12	42.6	25.03
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	176	89.6
Suspended Solids mg/l	12	292	127.55
BOD - 5 days (Total) mg/l	12	222	111.35
COD-Cr mg/l	12	1352	334.22
Hydraulic Capacity	N/A	28491	10177

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 less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional ‘Operational Performance Summary’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF3200D0008SW001

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)
COD-Cr mg/l	125	250	N/A	52	N/A	N/A	15.12	Pass
Temperature °C	25	N/A	N/A	36	N/A	N/A	12.2	Pass
Total Nitrogen mg/l	10	N/A	N/A	52	1	N/A	6.56	Pass
Suspended Solids mg/l	10	25	N/A	52	2	N/A	3.01	Pass
pH pH units	6-9	6-9	N/A	52	N/A	N/A	7.98	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	7	14	N/A	52	N/A	N/A	1.17	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.2	0.24	N/A	52	2	1	0.1	Fail
Ammonia-Total (as N) mg/l	0.4	0.8	N/A	52	N/A	N/A	0.05	Pass
Dissolved Oxygen % Saturation	50	40	N/A	23	N/A	N/A	94.88	Pass
Total Phosphorus (as P) mg/l	0.3	0.36	N/A	52	N/A	N/A	0.18	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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Nitrite (as N) mg/l	N/A	N/A	N/A	52	N/A	N/A	0.03	
Zinc - filtered mg/l	N/A	N/A	N/A	10	N/A	N/A	62.2	
Dissolved Oxygen % O2	N/A	N/A	N/A	16	N/A	N/A	98.96	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	52	N/A	N/A	4.73	
Conductivity 20 C µS/cm	N/A	N/A	N/A	52	N/A	N/A	563.43	
Nitrate (as N) mg/l	N/A	N/A	N/A	52	N/A	N/A	4.71	

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

Cause of Exceedance(s):

Inadequate operational procedures/training.

Significance of Results:

The WWTP is non-compliant with the ELV's set in the Wastewater Discharge Licence. The impact on receiving waters is assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF3200D0008SW001

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 Status
Upstream	244152, 255383	RS25B280390	No	No	No	No	Poor
Downstream	241711, 250261	RS25B090100	No	No	No	No	Moderate

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	RS25B280390	2.98	RS25B090100	3.24	1.5	17.8
Ammonia-Total (as N) mg/l	RS25B280390	0.06	RS25B090100	0.03	0.065	-43.5
ortho-Phosphate (as P) - unspecified mg/l	RS25B280390	0.03	RS25B090100	0.04	0.035	25.2
Dissolved Oxygen mg/l	RS25B280390	8.94	RS25B090100	8.79		
Zinc - filtered mg/l	RS25B280390	7.89	RS25B090100	12.13		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Coliform Bacteria (Total) no./100mls	RS25B280390	228.5	RS25B090100	12033		
Conductivity 20 C µS/cm	RS25B280390	447.5	RS25B090100	533.25		
Total Nitrogen mg/l	RS25B280390	2.66	RS25B090100	3.23		
Dissolved Oxygen % Saturation	RS25B280390	81.36	RS25B090100	78.3		
COD-Cr mg/l	RS25B280390	33.5	RS25B090100	81.67		
Temperature °C	RS25B280390	12.03	RS25B090100	11.74		
Total Phosphorus (as P) mg/l	RS25B280390	0.04	RS25B090100	0.06		
Faecal coliforms no./100mls	RS25B280390	74	RS25B090100	2010		
pH pH units	RS25B280390	7.78	RS25B090100	7.85		

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results does not meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a deterioration in BOD and Ortho-P concentrations downstream of the effluent discharge is noted.

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.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - MULLINGAR WWTP

2.1.4.1 Treatment Efficiency Report - Mullingar 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	11877	668	94
TN	88391	24366	72
cBOD	316381	4360	99
COD	1180084	56166	95
SS	450374	11171	98

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

2.1.4.2 Treatment Capacity Report Summary - Mullingar 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.

Mullingar WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	37125
DWF to the Treatment Plant (m^3/day)	12375
Current Hydraulic Loading - annual max (m^3/day)	28491

Mullingar WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	10177
Organic Capacity (PE) - As Constructed	55000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	26458
Organic Capacity (PE) - Remaining	28542
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 - MULLINGAR 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)	273.1	Volume (m3)	3.3	0	Yes	Yes	Yes
Industrial / Commercial Sludge	10,490.92	Weight (Tonnes)	128	0.28	Yes	Yes	Yes

3 COMPLAINTS AND INCIDENTS

3.1 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

3.2 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)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Breach of ELV	Inadequate Operational Procedures / Training	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	2
Number of Incidents reported to the EPA via EDEN in 2019	2
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	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW13	244711, 254006	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	242997, 251931	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW2	243176, 251930	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW4	243705, 252285	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW6	243795, 252370	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not 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 / 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 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
D0008-SIP:01	WWTP and ancillary works to be constructed and commissioned	C	01/05/2009	Yes	Works Completed		
D0008-SIP:02	Construction of interceptor sewer and main lift pumping station	A	31/01/2011	Yes	Works Completed		
D0008-SIP:03	Discharge to cease: SW10 to	A	31/01/2011	Yes	Works		

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
	River Brosna				Completed		
D0008-SIP:04	Discharge to cease: SW11 to River Brosna	A	31/01/2011	Yes	Works Completed		
D0008-SIP:05	Discharge to cease: SW12 to River Brosna	A	31/01/2011	Yes	Works Completed		
D0008-SIP:06	Discharge to cease: SW3 to River Brosna	A	31/01/2011	Yes	Works Completed		
D0008-SIP:07	Discharge to cease: SW5 to River Brosna	A	31/01/2011	Yes	Works Completed		
D0008-SIP:08	Discharge to cease: SW7 to River Brosna	A	31/01/2011	Yes	Works Completed		
D0008-SIP:09	Discharge to cease: SW8 to River Brosna	A	31/01/2011	Yes	Works Completed		
D0008-SIP:10	Discharge to cease: SW9 to River Brosna	C	01/05/2009	Yes	Works Completed		
D0008-SIP:11	Installation of main storm water storage tank (6000m3) & storm water storage tank at treatment plant (650m3)	C	31/01/2011	Yes	Works Completed		
D0008-SIP:12	Upgrade of storm water overflow SW13 to comply with DoE criteria	C	31/01/2011	Yes	Works Completed		

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
D0008-SIP:13	Upgrade of storm water overflow SW2 to comply with DoE criteria	C	31/01/2011	Yes	Works Completed		
D0008-SIP:14	Upgrade of storm water overflow SW4 to comply with DoE criteria	C	31/01/2011	Yes	Works Completed		
D0008-SIP:15	Upgrade of storm water overflow SW6 to comply with DoE criteria	C	31/01/2011	Yes	Works Completed		

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 / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
There are no Improvements Programme 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.

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Habitats Impact Assessment	Yes	2010	No	
Priority Substances Assessment	Yes	2010	No	
Toxicity of Final Effluent	Yes	2016	No	
Toxicity/Leachate Management	Yes	2010	No	

5.1 HABITATS IMPACT ASSESSMENT

The Habitats Impact Assessment Report has been included in the AER 2010.

5.2 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2010.

5.3 TOXICITY OF FINAL EFFLUENT

The Toxicity of Final Effluent Report has been included in the AER 2016.

5.4 TOXICITY/LEACHATE MANAGEMENT

The Toxicity/Leachate Management Report has been included in the AER 2010.

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: 05/03/2020

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

There are no Appendices included.