Annual Environmental Report

2019

Ballinasloe

D0032-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0032-01, Ballinasloe, in Galway 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 was no major capital or operational changes undertaken.

1.2 TREATMENT SUMMARY

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

- Ballinasloe Secondary Discharge with a Plant Capacity PE of 100, the treatment type is 1 - Primary treatment
- Ballinasloe WWTP with a Plant Capacity PE of 13500, 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
TPEFF1200D0032SW002	Ballinasloe Secondary Discharge	Treated	Non-Compliant	N/A
TPEFF1200D0032SW001	Ballinasloe 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 BALLINASLOE SECONDARY DISCHARGE - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLINASLOE SECONDARY DISCHARGE

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
Suspended Solids mg/l	13	325	168.45
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	13	375	108.58
COD-Cr mg/l	13	953	290.75
Hydraulic Capacity	N/A	0	0

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 greater 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’.

2.1.2 EFFLUENT MONITORING SUMMARY -

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)
There is no Effluent data included in the AER.								

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):

There is no effluent data included in the AER to confirm an exceedance of ELV's.

Significance of Results:

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

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE

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	185477, 231416	RS26S071290	No	No	No	No	Moderate
Downstream	185748, 231068	RS26S071300	No	No	No	No	Moderate

The ambient results are included in the **Appendix 7.1 - Ambient monitoring summary**

Significance of Results:

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

The ambient monitoring results do 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 Ammonia and Ortho-Phosphate concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified; however, it is not known if it is 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 - BALLINASLOE SECONDARY DISCHARGE

2.1.4.1 Treatment Efficiency Report - Ballinasloe Secondary Discharge

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	N/A	N/A	N/A
COD	443974	N/A	N/A
SS	259424	N/A	N/A
TN	N/A	N/A	N/A
cBOD	176799	N/A	N/A

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

2.1.4.2 Treatment Capacity Report Summary - Ballinasloe Secondary Discharge

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.

Ballinasloe Secondary Discharge	
Peak Hydraulic Capacity (m^3/day) - As Constructed	N/A
DWF to the Treatment Plant (m^3/day)	N/A
Current Hydraulic Loading - annual max (m^3/day)	N/A
Average Hydraulic loading to the Treatment Plant (m^3/day)	N/A
Organic Capacity (PE) - As Constructed	100
Organic Capacity (PE) - Collected Load (peak week)[Note1]	30

Ballinasloe Secondary Discharge	
Organic Capacity (PE) - Remaining	70
Will the capacity be exceeded in the next three years? (Yes/No)	Unknown

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 - BALLINASLOE SECONDARY DISCHARGE

'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.							

2.2 BALLINASLOE WWTP - TREATED DISCHARGE

2.2.1 INFLUENT MONITORING SUMMARY - BALLINASLOE 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
Suspended Solids mg/l	13	325	168.45
COD-Cr mg/l	13	953	290.75
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	13	375	108.58
Hydraulic Capacity	N/A	15376	3931

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’.

2.2.2 EFFLUENT MONITORING SUMMARY - TPEFF1200D0032SW001

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	12	0	0	26.45	Pass
Suspended Solids mg/l	35	87.5	N/A	12	0	0	11.26	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	0	0	4.06	Pass
Ammonia-Total (as N) mg/l	2	2.4	N/A	12	0	0	0.21	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	1	1	0.24	Fail
pH pH units	N/A	N/A	N/A	12	N/A	N/A	7.65	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	6	N/A	N/A	0.18	

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):

Dosing Pump Failure and maintenance at WWTP.

Significance of Results:

The WWTP is non-compliant with the ELV's set in the Wastewater Discharge Licence. There was one exceedance in relation to ortho-phosphate, which was above the Condition 2 ELV. The impact on the receiving water is assessed further in Section 2.

2.2.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1200D0032SW001

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	185477, 231416	RS26S071290	No	No	No	No	Moderate
Downstream	187334, 229145	RS26S071400	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	RS26S071290	2.433	RS26S071400	1.025	1.5	-93.9
Ammonia-Total (as N) mg/l	RS26S071290	0.043	RS26S071400	0.026	0.065	-26.7
ortho-Phosphate (as P) - unspecified mg/l	RS26S071290	0.01	RS26S071400	0.015	0.035	14.3
Suspended Solids mg/l	RS26S071290	3.667	RS26S071400			
Dissolved Oxygen mg/l	RS26S071290	10.667	RS26S071400	8.917		
pH pH units	RS26S071290	8.033	RS26S071400	7.888		
Temperature °C	RS26S071290	11.467	RS26S071400	13.65		

Significance of Results:

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

The ambient monitoring results 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 Ortho-Phosphate concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified; however, it is not known if it is 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.

2.2.4 OPERATIONAL PERFORMANCE SUMMARY - BALLINASLOE WWTP

2.2.4.1 Treatment Efficiency Report - Ballinasloe 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)
SS	259424	16141	94
cBOD	176799	5827	97
COD	443974	37926	91
TP	N/A	277	N/A
TN	N/A	N/A	N/A

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

2.2.4.2 Treatment Capacity Report Summary - Ballinasloe 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.

Ballinasloe WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	10125
DWF to the Treatment Plant (m^3/day)	3375
Current Hydraulic Loading - annual max (m^3/day)	15376

Average Hydraulic loading to the Treatment Plant (m^3/day)	3931
Organic Capacity (PE) - As Constructed	13500
Organic Capacity (PE) - Collected Load (peak week)[Note1]	8501
Organic Capacity (PE) - Remaining	4999
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.

2.2.5 SLUDGE / OTHER INPUTS - BALLINASLOE 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)	13457.23	Weight (Tonnes)	165	0.93	No	Yes	Yes
Landfill Leachate (delivered by sewer network)	58200	Volume (m3)	717	4.05	Yes	Yes	Yes
Waterworks Sludge	46679	Volume (m3)	575	3.25	Yes	No	Yes
Other	751	Volume (m3)	9.2	0.05	Yes	No	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
There were no relevant environmental complaints in 2019.			

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)
Breach of ELV	Dosing pump failure or maintenance at WWTP	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	1
Number of Incidents reported to the EPA via EDEN in 2019	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	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
SW008	185437, 230940	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	184074, 229804	No	Low	Meeting	Unknown	Unknown	Not Monitored
SW004	185928, 230488	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW006	184190, 231738	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW010	186845, 230046	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	185724, 231058	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via 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?	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)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0032-SIP:01	Discontinue discharge from Imhoff Tank	C	31/12/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis

D0032-SIP:02	SW002 Secondary Discharge Point to be Discontinued	C	31/12/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the 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 / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
D0032-IP:34	Sludge Transfer Pumps will be replaced in the dewatering building	Improved Operational Control	31/12/2020	50% 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.

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	2015	No	
Toxicity/Leachate Management	Yes	2017	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the 2015 AER.

5.2 TOXICITY/LEACHATE MANAGEMENT

The Toxicity/Leachate Management Report has been included in the 2017 AER.

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.	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	No

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

Signed: Date: 24/04/2020

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

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambient Points - **D0032 – Secondary Discharge 2019**

Ambient Monitoring Point from WWDL (or as agreed with EPA)	***Irish Grid Reference***	**EPA Feature Coding Tool code**	**Receiving Waters Designation (Y/N)**				**WFD Status**
			Bathing Water	**Drinking Water**	**FWPM**	**Shellfish**	
Upstream Monitoring Point RS26S071290	185477, 231416	IE_SH_26S071290	No	No	No	No	Moderate
Down Stream Monitoring Point RS26S071300	185748, 231068	IE_SH_26S071300	No	No	No	No	Moderate

D0032 - Ballinasloe Secondary Discharge - Ambient Data (Down Stream) 2019

					Parameter	pH	Biological Oxygen Demand	Ortho-Phosphate P	Ammonia N	Dissolved Oxygen	Suspended Solids	Temperature
					Max.	--	--	--	--	--	--	--
					Min.	--	--	--	--	--	--	--
					Test Method	--	--	--	--	--	--	--
Station	Sample Reference	Sample Date	Sample Time	Sample Method	Analyst Conclusion	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	Degrees C
Ballinasloe WWTP: Downstream Secondary Discharge	149579/003	7-Mar-2019	10:30	Grab	-	8	4.2	0.022	0.047	12	< 5	11.7
Ballinasloe WWTP: Downstream Secondary Discharge	161592/003	9-Aug-2019	13:10	Grab	-	7.8	2.7	0.028	0.03	7	8	7.1
Ballinasloe WWTP: Downstream Secondary Discharge	166552/002	11-Oct-2019	11:30	Grab	-	7.9	2.2	< 0.005	0.011	8	< 5	8.4