

# Annual Environmental Report

2018



Ballina

D0189-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0189-01, Ballina, in Tipperary 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 TREATMENT SUMMARY

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

- Ballina (North Tipperary) WWTP with a Plant Capacity PE of 4500

The treatment process includes the following:

### 1.1.1 BALLINA (NORTH TIPPERARY) WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Automatic Screening and Grit Removal
Primary Treatment	No	
Secondary Treatment	Yes	Conventional Activated Sludge
Nutrient Removal	Yes	Ferric Dosing
Tertiary Treatment	No	

## 1.2 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
TPEFF2800D0189SW001	Ballina (North Tipperary) WWTP	Treated	Compliant	Not Applicable

## 1.3 LICENCE SPECIFIC REPORTING INCLUDED IN AER

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

## 2 TREATMENT PLANT PERFORMAND AND IMPACT SUMMARY

### 2.1 BALLINA (NORTH TIPPERARY) WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - BALLINA (NORTH TIPPERARY) 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
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	12	470	183.84
<b>Suspended Solids mg/l</b>	12	597	177.83
<b>COD-Cr mg/l</b>	12	852	332.73
<b>Hydraulic Capacity</b>	N/A	9676.1	1953.04

#### 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 - TPEFF2800D0189SW001

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	0	12	0	0	29.58	Pass
Suspended Solids mg/l	35	87.5	0	12	0	0	9.89	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	12	0	0	7.11	Pass
Nitrate (as N) mg/l	0	0	0	12	0	0	5.67	
ortho-Phosphate (as P) - unspecified mg/l	0	0	0	12	0	0	0.84	
Ammonia-Total (as N) mg/l	0	0	0	12	0	0	4.16	
Total Oxidised Nitrogen (as N) mg/l	0	0	0	12	0	0	6.04	
Nitrite (as N) mg/l	0	0	0	11	0	0	0.38	
Temperature °C	0	0	0	1	0	0	18	
pH pH units	0	0	0	12	0	0	7.09	

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.

## 2.1.3 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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	170748, 172486	TPEFF2800D0189SW001	No	No	No	No	Unassigned
Downstream	170636, 172540	TPEFF2800D0189SW001	No	No	No	No	Unassigned

The results for ambient results and / or additional monitoring data sets are included in the **Appendix IW.Eims.AERReportPortal.Models.AppendixModel**

### Significance of Results:

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

The ambient monitoring results meet the required EQS.

The discharge from the wastewater treatment plant has an observable impact on the water quality.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

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

Other Potential cause of deterioration in water quality relevant to this area are: Unknown.

## 2.1.4 OPERATIONAL PERFORMANCE SUMMARY

### 2.1.4.1 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:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
SS	0	6795.56	94.44	
cBOD	0	4885.89	96.13	
TN				
COD	0	20334.9	91.11	
TP				

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

### 2.1.4.2 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.

Ballina (North Tipperary) WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	3240
DWF to the Treatment Plant (m3/day)	1080
Current Hydraulic Loading - annual max (m3/day)	9676.1
Average Hydraulic loading to the Treatment Plant (m3/day)	1953.04
Organic Capacity (PE) - As Constructed	4500
Organic Capacity (PE) - Collected Load (peak week)	5178
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

## 2.1.5 SLUDGE / OTHER INPUTS

'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.							

## 2.1.6 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
<b>Ballina (North Tipperary) WWTP</b>	Cake Sludge	26.88	Weight (Tonnes)	16	Acorn Recycling Ltd. W0249-01
<b>Ballina (North Tipperary) WWTP</b>	Cake Sludge	97.1	Weight (Tonnes)	16	Bunlicky WWTP Limerick D0013-01
<b>Ballina (North Tipperary) WWTP</b>	Cake Sludge	29.8	Weight (Tonnes)	16	H&L Environmental Services. WFP-T-12-0003-02
<b>Ballina (North Tipperary) WWTP</b>	Liquid Sludge	2327.89	Weight (Tonnes)	4	Bunlicky WWTP Limerick D0013-01
<b>Ballina (North Tipperary) WWTP</b>	Liquid Sludge	58	Weight (Tonnes)	4	Nenagh WWTP

## 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
3	Blocked Sewer	0	3

### 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)
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Spillage	Plant or equipment maintenance at WWTP	1	No	Yes
Uncontrolled release	SWO Exceptional rainfall	2	Yes	No

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2018	3
Number of Incidents reported to the EPA via EDEN in 2018	3
Explanation of any discrepancies between the two numbers above	

## 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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
TPEFF2800D0189SW002	170648, 172874	Yes	Unknown	Not yet Assessed			Not Monitored
TPEFF2800D0189SW003	170507, 172641	Yes	Unknown	Not yet Assessed			Not Monitored
TPEFF2800D0189SW004	169847, 173200	Yes	Unknown	Not yet Assessed			Not Monitored
TPEFF2800D0189SW005	170295, 173012	Yes	Unknown	Not yet Assessed			Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	No

SWO Summary	
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
<b>D0189-SIP:01</b>	Complete improvements to comply with ELVs specified in Schedule A: Discharges and Discharge Monitoring. Implement, in accordance with Condition 5.6.1, either (a) improvements to the existing waste water works to achieve compliance with the emission limit values specified in Schedule A.1: Primary Waste Water discharge and Monitoring of this licence or (b) an alternative primary discharge point, or (c) connection to another agglomeration.	C	31/12/2019	No	Not Started		The Condition 5 Assessment will be completed by Q1 2019
<b>D0189-SIP:02</b>	Improvement works including nutrient reduction to ensure compliance with emission limit values as set out in Schedule A: Discharges and Discharge Monitoring	C	31/12/2019	No	Not Started		The improvement programme will be reviewed by IW to assess the works required to comply with the licence condition on a prioritized 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
<b>There are no Improvements Programme for this Agglomeration.</b>				

## 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.a 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
<b>There is no Licence Specific Report Required in this AER Annual Review.</b>				

## 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	
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	
Have these processes commenced?	
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: 11/04/2019

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 - Ambient monitoring summary

Ballina Upstream 2018

Category	River	Station	Station Reference	Easting	Northing	Sample Refere	Sample Date	Analyst Conclusion	Parameter	Ammonia N	BOD	D.O.	D.O. % Saturation	Ortho-Phosphate P	pH	Suspended Solids	Temperature
									mg/l	mg/l	mg/l	% O2	mg/l	pH units	mg/l	Degrees C	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0007	18-Jan-2018	-	0.051	1.9	11.58	95.9	0.022	7.78	7.2		
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0145	22-Mar-2018	-	0.01	2.1	11.38	96.8	0.01	8.05	0.4	8.2	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0191	3-May-2018	-	0.023	1.9	10.66	107.1	0.014	8.04	1.2	10.4	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0255	7-June-2018	-	0.035	2	9.9	98.2	0.023	8.14	< 0.4	14.4	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0300	10-July-2018	-	0.015	2.2	9.33	96.8	0.043	7.96	1.2	14.3	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0386	23-Aug-2018	-	< 0.01	1.8	9.32	94.5	0.024	7.95	4.8	14.5	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0442	19-Sep-2018	-	0.027	2	10.19	97.4	0.025	8.02	0.8	12.7	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0476	23-Oct-2018	-	0.02	2	10.29	94.3	0.02	7.93	1.6	9.8	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0554	29-Nov-2018	-	0.013	1.4	10.91	97.9	0.023	7.62	4	9.4	
Ambient Monitoring	Grange (Tipperary)	Upstream @ Ballina WWTP	RS25G102380	170749	172486	1855WW0593	13-Dec-2018	-	0.017	2.1	11.3	97.7	0.021	7.92	3.2	8.6	

Ballina Downstream 2018

Category	River	Station	Station Reference	Easting	Northing	Sample Ref	Sample Date	Analyst Conclusion	Parameter	Ammonia N	BOD	D.O.	D.O. % Saturation	Ortho-Phosphate P	pH	Suspended Solids	Temperature
									mg/l	mg/l	mg/l	% O2	mg/l	pH units	mg/l	Degrees C	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0008	18-Jan-2018	-	0.053	1.9	11.14	94.2	0.028	7.6	7.2		
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0146	22-Mar-2018	-	0.15	2.4	10.94	92.6	0.08	7.72	0.8	8	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0192	3-May-2018	-	0.322	2.1	10.01	100	0.082	7.66	0.4	10.5	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0256	7-June-2018	-	2.42	2.4	8.93	89.1	0.064	7.75	< 0.4	15.3	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0301	10-July-2018	-	0.035	2.1	8.69	91.2	< 0.01	8.44	1.6	19.6	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0387	23-Aug-2018	-	1.28	6.9	6.88	70.2	1.24	7.26	14.8	16.1	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0443	19-Sep-2018	-	0.648	2.7	7.74	75.1	0.396	7.44	4.4	12.7	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0477	23-Oct-2018	-	0.06	2.3	9.59	85.8	0.408	7.62	2	10.9	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0555	29-Nov-2018	-	0.017	1.6	10.77	96.4	0.065	7.64	3.2	9.2	
Ambient Monitoring	Grange (Tipperary)	Downstream @ Ballina WWTP	RS25G102520	170637	172541	1855WW0594	13-Dec-2018	-	0.046	2.1	11.07	96.2	0.036	7.79	4	8.8	