

Annual Environmental Report

2020



Ballina

D0016-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0016-01, Ballina, in Mayo 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)

- BALLINA (MAYO) WWTP - 2020 with a Plant Capacity PE of 25000, 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
TPEFF2200D0016SW001	BALLINA (MAYO) WWTP - 2020	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
Toxicity of Final Effluent	Yes

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 BALLINA (MAYO) WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLINA (MAYO) WWTP - 2020

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 Nitrogen mg/l	12	83.1	26.92
COD-Cr mg/l	12	800	170.6
Suspended Solids mg/l	12	410	66.43
BOD, 5 days with Inhibition (Carbonaceo mg/l)	12	227	64.09
Hydraulic Capacity	N/A	20605	7929

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 - TPEFF2200D0016SW003

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	N/A	N/A	18.5	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	3.91	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	25	50	N/A	12	N/A	N/A	2.29	Pass
Ammonia-Total (as N) mg/l	10	12	N/A	12	N/A	N/A	0.38	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.72	Pass
ortho-Phosphate (as P) - unspecified mg/l	5	6	N/A	12	N/A	N/A	0.6	Pass
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	346.93	
Faecal coliforms cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.78	
E. Coli MPN/100ml	N/A	N/A	N/A	2	N/A	N/A	40078.12	
Enterococci (Intestinal) cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	3661.95	
Nitrate (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	5.11	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	6.38	
Nitrite (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.15	

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):

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 TPEFF2200D0016SW003

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	125292, 319885	TW22005298MY1012	No	No	No	No	Moderate
Downstream	125292, 320420	TW22005298MY1013	No	No	No	No	Moderate

Where the receiving water body is not a river or where the data is not in EDEN – the Ambient data will be appended.

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 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 - BALLINA (MAYO) WWTP - 2020

2.1.4.1 Treatment Efficiency Report - BALLINA (MAYO) WWTP - 2020

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	2514	N/A
COD	487701	59864	88
cBOD	183216	7422	96
SS	189919	12650	93
TN	77001	20634	73

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

2.1.4.2 Treatment Capacity Report Summary - BALLINA (MAYO) WWTP - 2020

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 (MAYO) WWTP - 2020	
Peak Hydraulic Capacity (m³/day) - As Constructed	13620
DWF to the Treatment Plant (m³/day)	4540
Current Hydraulic Loading - annual max (m³/day)	20605
Average Hydraulic loading to the Treatment Plant (m³/day)	7929
Organic Capacity (PE) - As Constructed	25000
Organic Capacity (PE) - Collected Load (peak week)^{Note1}	15794
Organic Capacity (PE) - Remaining	9206

BALLINA (MAYO) WWTP - 2020

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 - BALLINA (MAYO) WWTP - 2020

'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 sewer network)	75969	Volume (m3)	925	2.62	Yes	No	Yes
Other	972	Volume (m3)	11.84	0.03	Yes	No	No

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 2020.			

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	Other	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	2
Number of Incidents reported to the EPA via EDEN in 2020	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 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW003	124874, 318970	No	Low	Meeting	Unknown	Unknown	Not Monitored
SW006	124409, 318540	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW010	123297, 321088	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW2	124978, 319144	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW4	125420, 319502	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW5	125068, 319270	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

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 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW6	124856, 319021	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW7	124621, 318765	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW8	124691, 318744	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW9	124634, 318674	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	123870, 316709	No	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	124855, 319020	No	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	124855, 319021	No	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	124013, 317622	No	Low	Meeting	Unknown	Unknown	Unknown

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?	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?	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
D0016-SIP:01	Upgrade SWOs to comply with DoE criteria (SW2)	C	31/12/2011	Yes	Works Completed		
D0016-SIP:02	Upgrading of pumping station at Bachelor's Walk (SW2)	C	01/05/2009	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.

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
Toxicity of Final Effluent	Yes	2017	Yes	5.1

5.1 TOXICITY OF FINAL EFFLUENT

The Toxicity of Final Effluent Report is included in Appendix . A summary of the findings of this report is included below.

Parameter	Value
Are any procedural and/or infrastructural works to reduce the toxicity of the final discharge included?	No
Does the report identify that the discharge is toxic to any of the species in the study?	No
Has the study been carried out against 4 species in 3 trophic levels?	Yes
Is a Toxicity report required?	Yes
List species impacted	N/A
Recommendations	None

Parameter	Value
Status of any improvement measures required	N/A

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	Yes

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

Signed: Date: 19/04/2021

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 - Other

Ballina D0016-01 Ambient Monitoring

Date		Station Reference	Ammonia N	Biological Oxygen Demand	Calcium	Chloride	Conductivity @ 20°C	E Coli	Enterococci	Faecal Coliforms
			mg/l	mg/l	mg/l	mg/l	µS/cm	MPN/100mls	cfu/100mls	cfu/100mls
15-Jan - 2020	Downstream Ambient	TW22005298MY1013	0.022	1.6	62.2	21	306	210	73	500
15-Jan - 2020	Upstream Ambient	TW22005298MY1012	0.019	2	62.2	21	291	236	67	300
22-July-2020	Downstream Ambient	TW22005298MY1013	0.006	1.3	61	590	2049	1733	42	1780
22-July-2020	Upstream Ambient	TW22005298MY1012	0.025	1.1	54.8	21	284	866	57	1350

Fluoride	Iron	Magnesium	Nitrate N	Ph	Potassium	sodium	Total Hardness	Sulphate	Total Nitrogen N
mg/l	µg/l	mg/l	mg/l	Ph units	mg/l	mg/l	mg/l	mg/l	mg/l
0.2	580	5	0.41	7.9	1.7	12.3	175.8	8.5	1.3
0.2	530	4.1	0.47	7.8	1.8	12.8	172.4	7.5	<1
0.1	210	42.4	0.16	8.3	23.4	334.3	327.1	97	<1
0.2	250	4.3	0.18	8.3	1.5	13.3	154.5	14	<1

Ambient Points **WHERE THE AMBIENT POINTS ARE NOT IN EIMS AER – PLEASE COMPLETE THE BELOW TABLE**

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	125292, 319885	TPEFF2200D0016SW001	No	No	No	No	Moderate
Downstream Monitoring Point	125292, 320420	TPEFF2200D0016SW001	No	No	No	No	Moderate

WHERE THE AMBIENT DATA IS NOT IN EDEN/EIMS – PLEASE COMPLETE THE BELOW TABLE and PLEASE ALSO INLCUDE THE MONITORING DATA

Ambient Impact Assessment Table

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS (mean)	%EQS
cBOD mg/l	TPEFF2200D0016SW001	1.550	TPEFF2200D0016SW001	1.450	1.500	-6.667
Ammonia (as N) mg/l	TPEFF2200D0016SW001	0.022	TPEFF2200D0016SW001	0.014	0.065	-12.308



ENVIRONMENTAL LABORATORY SERVICES
EXCELLENCE THROUGH ACCREDITATION

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LABORATORY SERVICES**
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Contact Name	Olivia Feeney	Report Number	174856 - 1
Address	Irish Water C/O Mayo County Council Environment Section	Sample Number	174856/001
		Date of Receipt	06/02/2020
		Date Started	06/02/2020
Tel No	094 9047243	Received or Collected	ELS-PickUp
Customer PO	IW 51491896	Date of Report	24/02/2020
Project No.	QN009883	Sample Type	Waste Water
Customer Ref	Ballina Effluent	Condition on receipt	Satisfactory

LRN/StationCode	IW-May-336	Entity/EPACode		Entity/W8Z	Ballina
LA Sample Code		ELS Sample Code	174856/001	Station Name	Effluent
Category	Wastewater	SampleReason	Compliance		
SampleDate	06/02/2020	SampleTime	12:25	SampleMethod	Comp
Laboratory	ELS	Analyst	ELS	Sample By	Thomas
SampleNotes	225200 220244			TPUPurpose	Ballina Effluent

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	OOS
Tox-Tisbe battagliai 48 h LC50									
	Tox-Tisbe battagliai 48 h LC50	*	Default	0.0		3.3	ToxicUnits		
Tox-Vibrio fischeri 30 min EC50									
	Vibrio fischeri 30 min EC50	*	Default	0.0		<1.2	ToxicUnits		

Signed : _____

24/02/2020

Rachel Walsh-Technical Manager

NOTES

- 1.This Report shall not be Reproduced except in full, without the permission of the laboratory and only relates to the items tested.
- 2.SPEC= Allowable limit or parametric value
- 3.OOS=Result which is outside specification highlighted as OOS-A

- 4.LOQ=Limit of Quantification or lowest value that can be reported
- 5.ACCRED=Indicates matrix accreditation for the test,a blank field indicates not accredited
- 6."" Indicates sub-contract test

7.Where the date of sampling has not been provided,sample stability times cannot be assessed. It is therefore possible that the results provided may be compromised