Annual Environmental Report

2023

Ballindine

D0355-01

CONTENTS

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0355-01, Ballindine, 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.

1.2 TREATMENT SUMMARY

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

- Ballindine WWTP with a Plant Capacity PE of 730, 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
TPEFF2200D0355SW001	Ballindine WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l ortho-Phosphate (as P) - unspecified mg/l

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 BALLINDINE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLINDINE 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
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	7	200	48
Suspended Solids mg/l	7	336	69
COD-Cr mg/l	7	526	139
Total Nitrogen mg/l	7	46	16
Hydraulic Capacity	N/A	1181	343

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’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF2200D0355SW001

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	7	N/A	N/A	35	Pass
Suspended Solids mg/l	35	87.5	N/A	7	1	N/A	15	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	13	26	N/A	7	2	N/A	6.63	Fail
pH pH units	9	9	N/A	7	N/A	N/A	7.97	Pass
Ammonia-Total (as N) mg/l	6	7.2	N/A	7	4	4	6.13	Fail
ortho-Phosphate (as P) - unspecified mg/l	0.5	0.6	N/A	7	1	1	0.073	Fail
Total Nitrogen mg/l	N/A	N/A	N/A	6	N/A	N/A	13	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	1	N/A	N/A	0.360	
Conductivity @20°C µS/cm	N/A	N/A	N/A	7	N/A	N/A	595	

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

Cause of Exceedance(s):

Refer to Incident Section of Report.

Significance of Results:

The WWTP is non compliant with the ELVs 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 TPEFF2200D0355SW001

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	136082, 269915	RS30B030150	No	No	No	No	Poor
Downstream	134696, 270911	RS30B030940	No	No	No	No	Good

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

The ambient monitoring results do not meet the required EQS at the downstream monitoring location. 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 (as N) mg/l, concentrations downstream of the effluent discharge is noted.

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 - BALLINDINE WWTP

2.1.4.1 Treatment Efficiency Report - Ballindine 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)
TN	2410	1775	26
SS	10478	1783	83
cBOD	7341	808	89
TP	N/A	14	N/A
COD	21069	4282	80

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

2.1.4.2 Treatment Capacity Report Summary - Ballindine 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.

Ballindine WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	527
DWF to the Treatment Plant (m^3/day)	183
Current Hydraulic Loading - annual max (m^3/day)	1181
Average Hydraulic loading to the Treatment Plant (m^3/day)	343
Organic Capacity (PE) - As Constructed	730
Organic Capacity (PE) - Collected Load (peak week)[Note1]	419
Organic Capacity (PE) - Remaining	311
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 - BALLINDINE 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)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

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)
Breach of ELV	WWTP upgrade required to meet ELV	Yes	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
SW002	136040,270015	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW003	136040,270015	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored

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 (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	No
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?	Unknown

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
There are no Specified Improvement Programmes for this Agglomeration.							

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
D0355-01-Priority Substances Assessment	Yes	No

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	N/A
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:

Signed: Date: 04/03/2024

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

Ballindine Ambient Points

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	136082, 269915	RS30B030150	No	No	No	No	Poor
Downstream Monitoring Point	134696, 270911	RS30B030940	No	No	No	No	Good

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
BOD mg/l	RS30B030150	1.56	RS30B030940	1.35	1.5	-14%
Ammonia (as N) mg/l	RS30B030150	0.039	RS30B030940	0.126	0.065	133.8%
ortho-Phosphate (as P) - unspecified mg/l	RS30B030150	0.021	RS30B030940	0.038	0.035	48.5%

Ballindine D0355-01 Ambient Monitoring Data

				Parameter	Ammonia	pH	Dissolved Oxygen	Biological Oxygen Demand	Ortho-Phosphate	Dissolved Oxygen	Temperature	Total Nitrogen
Station	Station Reference	River Basin District	Sample Date		mg/l N	pH units	mg/l	mg/l	mg/l P	% Saturation	Degrees C	mg/l N
Ballindine Upstream	RS30BO30150	Western	20-Jan-2023	-	0.04	7.4	12.71	1.9	<0.05		4.9	1.6
Ballindine Downstream	RS30BO30940	Western	20-Jan-2023	-	0.11	7.5	11.28	<1	<0.05		4.1	1.9
Ballindine Downstream	RS30BO30940	Western	14-Feb-2023	-	0.23	7.6	10.62	1	<0.05		11	1.8
Ballindine Upstream	RS30BO30150	Western	14-Feb-2023	-	0.04	7.9	10.5	1.6	<0.05		11.1	1.5
Ballindine Downstream	RS30BO30940	Western	24-May-2023	-	0.04	7.8	9.53	<1	0.15	90.41	12.9	1.7
Ballindine Upstream	RS30BO30150	Western	24-May-2023	-	0.07	8	8.86	2.1	<0.01	82.19	12.5	1
Ballindine Downstream	RS30BO30940	Western	16-June-2023	-	0.65	7.7	6.97	1.7	0.02	78.16	17	2.8
Ballindine Upstream	RS30BO30150	Western	16-June-2023	-	0.01	7.7	6.99	1.1	0.03	78.39	21	0.9
Ballindine Upstream	RS30BO30150	Western	25-July-2023	-	0.01	7.8	8.51	<1	<0.01	91.7	15.8	1.7
Ballindine Downstream	RS30BO30940	Western	25-July-2023	-	0.07	7.6	8.36	<1	0.01	92.47	15.9	1.9
Ballindine Upstream	RS30BO30150	Western	17-Aug-2023	-	0.06	7.8	7.67	<1	0.02	72.76	13	1.4
Ballindine Downstream	RS30BO30940	Western	17-Aug-2023	-	0.04	7.6	6.38	<1	0.02	60.26	12.8	1.9
Ballindine Upstream	RS30BO30150	Western	29-Sep-2023	-	0.03	7.5	8.02	<1	0.02	77.45	13.8	2.1
Ballindine Downstream	RS30BO30940	Western	29-Sep-2023	-	0.03	7.5	6.77	<1	0.03	65.09	13.6	2.1
Ballindine Upstream	RS30BO30150	Western	11-Oct-2023	-	0.01	8	9.53	<1	0.01	91.5	13.2	1.5
Ballindine Downstream	RS30BO30940	Western	11-Oct-2023	-	0.01	8	8.73	<1	0.01	83.7	13.1	1.5
Ballindine Downstream	RS30BO30940	Western	1-Nov-2023	-	0.03	7.4	8.05	<1	0.05	75.2	10.6	1.8
Ballindine Upstream	RS30BO30150	Western	1-Nov-2023	-	0.01	7.4	8.76	<1	0.02	82	10.7	1.6
Ballindine Upstream	RS30BO30150	Western	19-Dec-2023	-	0.11	7.7	11.06	1.1	0.03	95.4	9.2	2
Ballindine Downstream	RS30BO30940	Western	19-Dec-2023	-	0.05	7.8	10.22	<1	0.02	87.2	8.9	1.8