Annual Environmental Report

2019

Bundody

D0163-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0163-01, Bunclody, in Wexford 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 nor changes in 2019

1.2 TREATMENT SUMMARY

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

- BUNCLODY WWTP with a Plant Capacity PE of 6500, 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
TPEFF3300D0163SW001	BUNCLODY WWTP	Treated	Non-Compliant	Ammonia-Total (as N) 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 BUNCLODY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BUNCLODY 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
COD-Cr mg/l	12	970	238.5
Total Nitrogen mg/l	12	56.1	27.09
Total Phosphorus (as P) mg/l	12	12.8	4.95
Suspended Solids mg/l	12	457	87.12
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	356	98.32
Hydraulic Capacity	N/A	2639	763.6

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 - TPEFF3300D0163SW001

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	9.4	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	2.69	Pass
Temperature °C	25	25	N/A	12	N/A	N/A	8.69	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	N/A	N/A	1.24	Pass
Total Nitrogen mg/l	15	18	N/A	12	N/A	N/A	4.8	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.13	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	1	1	1.36	Fail
Total Phosphorus (as P) mg/l	2	2.4	N/A	12	N/A	N/A	0.12	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	N/A	N/A	0.06	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)
Visual Inspection Descriptive	N/A	N/A	N/A	13	N/A	N/A	N/A	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	2.99	
Conductivity 20 C µS/cm	N/A	N/A	N/A	12	N/A	N/A	327.85	
Fats, Oils & Greases mg/l	N/A	N/A	N/A	4	N/A	N/A	4.14	
Nitrite (as N) mg/l	N/A	N/A	N/A	1	N/A	N/A	0.11	

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):

Operational MLSS issue.

Significance of Results:

The WWTP is not compliant with the ELVs set in the WWDL. Monitoring in 2019 showed a Single ELV breach in relation to Ammonia, which resulted in very slight localised impact only.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF3300D0163SW001

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	291984, 155751	RS12S021800	No	No	No	No	Unassigned
Downstream	293314, 154829	RS12S021900	No	No	No	No	Good

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 with Inhibition (Carbonaceous BOD) mg/l	RS12S021800	1	RS12S021900	1	1.5	0
BOD - 5 days (Total) mg/l	RS12S021800	1.15	RS12S021900	1	1.5	-10
Ammonia-Total (as N) mg/l	RS12S021800	0.046	RS12S021900	0.085	0.065	60.5
ortho-Phosphate (as P) - unspecified mg/l	RS12S021800	0.017	RS12S021900	0.02	0.035	9.6
Calcium - filtered mg/l	RS12S021800	29	RS12S021900			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Cadmium - filtered µg/l	RS12S021800	0.03	RS12S021900			
Barium - filtered µg/l	RS12S021800	13	RS12S021900			
Anthracene µg/l	RS12S021800	0.005	RS12S021900			
2,4 D µg/l	RS12S021800	0.019	RS12S021900			
Benzo(k)fluoranthene µg/l	RS12S021800	0.003	RS12S021900			
Benzo(b)fluoranthene µg/l	RS12S021800	0.002	RS12S021900			
Mecoprop µg/l	RS12S021800	0.022	RS12S021900			
Temperature °C	RS12S021800	11.863	RS12S021900	9.975		
Suspended Solids mg/l	RS12S021800	6	RS12S021900			
Manganese - filtered µg/l	RS12S021800	8.5	RS12S021900			
Sodium - filtered mg/l	RS12S021800	8.6	RS12S021900			
Indeno(1,2,3-c,d)pyrene µg/l	RS12S021800	0.003	RS12S021900			
True Colour mg/litre Pt Co	RS12S021800	43.083	RS12S021900			
Total Oxidised Nitrogen (as N) mg/l	RS12S021800	3.775	RS12S021900			
Benzo(g,h,i)perylene µg/l	RS12S021800	0.002	RS12S021900			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Conductivity @25°C µS/cm	RS12S021800	257.417	RS12S021900			
Chloride mg/l	RS12S021800	15.876	RS12S021900			
Dissolved Organic Carbon mg/l	RS12S021800	5.408	RS12S021900			
Alkalinity-total (as CaCO3) mg/l	RS12S021800	80.583	RS12S021900			
Dissolved Oxygen % Saturation	RS12S021800	101.6	RS12S021900	105.275		
Benzo(a)pyrene µg/l	RS12S021800	0.002	RS12S021900			
Copper - filtered µg/l	RS12S021800	1.6	RS12S021900			
Boron - filtered µg/l	RS12S021800	11	RS12S021900			
Aluminium - filtered µg/l	RS12S021800	58	RS12S021900			
Strontium - filtered µg/l	RS12S021800	65	RS12S021900			
Potassium - filtered mg/l	RS12S021800	1.7	RS12S021900			
Magnesium - filtered mg/l	RS12S021800	4.8	RS12S021900			
Total Hardness (as CaCO3) mg/l	RS12S021800	106.417	RS12S021900			
Sum 4_IWW: Benzo[b]fluoranthene+Benzo[k]fluoranthene µg/l	RS12S021800	0.003	RS12S021900			
Iron - filtered µg/l	RS12S021800	100	RS12S021900			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Diuron µg/l	RS12S021800	0.127	RS12S021900			
Nitrate (as N) mg/l	RS12S021800	3.775	RS12S021900			
Dissolved Oxygen mg/l	RS12S021800	10.659	RS12S021900	10.45		
Fluoranthene µg/l	RS12S021800	0.004	RS12S021900			
pH pH units	RS12S021800	7.812	RS12S021900	7.498		
Uranium - filtered µg/l	RS12S021800	5.4	RS12S021900			
Zinc - filtered µg/l	RS12S021800	4.8	RS12S021900			
Total Nitrogen mg/l	RS12S021800	4.525	RS12S021900	4.375		
MCPA µg/l	RS12S021800	0.049	RS12S021900			
Total Phosphorus (as P) mg/l	RS12S021800	0.06	RS12S021900	0.06		
Nitrite (as N) µg/l	RS12S021800	11.104	RS12S021900			

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.

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 - BUNCLODY WWTP

2.1.4.1 Treatment Efficiency Report - BUNCLODY 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	1230	29	98
TN	6734	1140	83
SS	21658	637	97
COD	59289	2229	96
cBOD	24441	293	99

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

2.1.4.2 Treatment Capacity Report Summary - BUNCLODY 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.

BUNCLODY WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	4389
DWF to the Treatment Plant (m^3/day)	1463
Current Hydraulic Loading - annual max (m^3/day)	2639

BUNCLODY WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	763.6
Organic Capacity (PE) - As Constructed	6500
Organic Capacity (PE) - Collected Load (peak week)[Note1]	2667
Organic Capacity (PE) - Remaining	3833
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 - BUNCLODY 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 is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Blocked Sewer	0	1

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	WWTP biological sludge issue	1	No	Yes

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
SW-2	291586, 156570	Yes	Low	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?	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
D0163-SIP:01	Construction of forward feed pumping station and associated storm water storage tank	C	31/12/2010	Yes	Works Completed		
D0163-SIP:03	Discharge to cease: SW-4 to stream with ultimate discharge to River Slaney	A	31/12/2010	Yes	Works Completed		
D0163-SIP:04	Discharge to cease: SW-5 to stream with ultimate discharge to River Slaney	A	31/12/2010	Yes	Works Completed		
D0163-SIP:05	Discontinuation of Secondary discharge(s)	C	31/12/2010	Yes	Works Completed		
D0163-SIP:02	Discharge to cease: SW-3 to River Slaney	A	31/12/2010	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
D0163-SIP:06	WWTP and ancillary works	C	31/12/2010	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
Priority Substances Assessment	Yes	2014	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2014

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: 08/04/2020

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

There are no Appendices included