Annual Environmental Report

2022

Clara and Ballycumber

D0142-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 AER

This Annual Environmental Report has been prepared for D0142-01, Clara and Ballycumber, in Offaly 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, significant changes or operational changes undertaken in 2022.

1.2 TREATMENT SUMMARY

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

- Clara WWTP with a Plant Capacity PE of 9000, 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
TPEFF2500D0142SW001	Clara WWTP	Treated	Compliant	N/A

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 CLARA WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CLARA 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
Total Phosphorus (as P) mg/l	5	15	5.69
BOD, 5 days with Inhibition (Carbonaceous) mg/l	13	540	173
pH pH units	13	7.91	7.44
ortho-Phosphate (as P) - unspecified mg/l	13	8.97	2.34
Total Nitrogen mg/l	5	135	51
Suspended Solids mg/l	13	634	183
COD-Cr mg/l	13	1220	398
Ammonia-Total (as N) mg/l	13	102	29
Hydraulic Capacity	N/A	4724	1831

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'. 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 - TPEFF2500D0142SW001

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	13	N/A	N/A	19	Pass
Suspended Solids mg/l	35	87.5	N/A	13	N/A	N/A	3.87	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	25	50	N/A	13	N/A	N/A	1.38	Pass
pH pH units	6.00	9.00	N/A	13	N/A	N/A	7.62	Pass
Ammonia-Total (as N) mg/l	1.50	1.80	N/A	13	N/A	N/A	0.118	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.800	0.960	N/A	13	N/A	N/A	0.225	Pass
Nitrate (as N) mg/l	N/A	N/A	N/A	4	N/A	N/A	14	

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)
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	5	N/A	N/A	0.280	
Total Nitrogen mg/l	N/A	N/A	N/A	5	N/A	N/A	14	
Nitrite (as N) mg/l	N/A	N/A	N/A	4	N/A	N/A	0.038	
Conductivity @20°C µS/cm	N/A	N/A	N/A	2	N/A	N/A	872	

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):

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 TPEFF2500D0142SW001

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	224504, 232293	RS25B090570	No	No	No	No	Moderate
Downstream	224342, 232427	RS25B090580	No	Yes	No	No	Moderate

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

The ambient monitoring results do not meet the required EQS at the upstream monitoring location. 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 - CLARA WWTP

2.1.4.1 Treatment Efficiency Report - Clara 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	30244	6777	78
TP	3384	138	96
cBOD	101594	708	99
COD	233233	10017	96
SS	107603	1995	98

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

2.1.4.2 Treatment Capacity Report Summary - Clara 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.

Clara WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	6750
DWF to the Treatment Plant (m^3/day)	2250
Current Hydraulic Loading - annual max (m^3/day)	4724

Clara WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	1831
Organic Capacity (PE) - As Constructed	9000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	4273
Organic Capacity (PE) - Remaining	4727
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 - CLARA 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 2022.			

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	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Abatement Equipment offline	Shock load to the WWTP	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2022	2
Number of Incidents reported to the EPA via EDEN in 2022	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 (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 2022 (No. of events)	Total volume discharged in 2022 (m^3)	Monitoring Status
SW2	224437 232269	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored*

* Event recorder only installed through WWTP Flow Monitoring Programme. No volumes recorded.

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 sewage was discharged via monitored 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?	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 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	Year included in AER	Included in this AER
Drinking Water Abstraction Point Risk Assessment	Yes	2015	No
Priority Substances Assessment	Yes	2016	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?	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	N/A

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

Date: 20/06/2023

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

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient Monitoring Summary

Clara Ambient Monitoring Summary 2022

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)			
			Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	224504, 232293	RS25B090570	No	No	No	No
Downstream Monitoring Point	224342, 232427	RS25B090580	No	Yes	No	No

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD (mean) mg/l	o-Phosphate (as P) (mean) mg/l	Ammonia (as N) (mean) mg/l
Upstream Monitoring Point	Moderate	1.635	0.0160	0.0804
Downstream Monitoring Point	Moderate	1.105	0.0113	0.0530
Difference		*-0.530*	*-0.005*	*-0.027*
EQS		1.500	0.035	0.065
% of EQS		-35.358%	-13.309%	-42.253%

Clara Ambient Monitoring Data 2022

Station	Sample Date	Temperature	pH	BOD	COD	Suspended solids	Total Nitrogen as N	Total Phosphorus as P	Total Ammonia as N	Ortho-Phosphate as P	Nitrite as N	Nitrate as N	Conductivity	DO	DO
		Degrees C	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µS/m	mg/l	% sat
Upstream	20/01/2022	5.5	7.63	<1	53	<2.5			0.02	0.009				12.27	95.9
Upstream	02/02/2022	4	7.78	1.4	21	6	2.1	0.05	0.039	0.006	0.013	1.916		10.2	96.1
Upstream	22/03/2022	5.1	8.12	1.2	< 20	< 2			0.23	< 0.02					
Upstream	12/04/2022	9.57	7.81	2.3	< 20	31			< 0.02	< 0.006				10.22	89.9
Upstream	13/04/2022	5	8.05	1.6	< 20	< 2			0.3	< 0.02				13.2	112.6
Upstream	17/05/2022	11.8	8.2	1.1	< 20	< 2	< 2	< 0.1	0.027	< 0.02	0.02	1.2	331	12.2	101.2
Upstream	08/06/2022	14.9	8.1	1.3	< 20	< 2.5			0.149	0.023				10.89	110.1
Upstream	28/07/2022	16.6	8.06	< 1	< 20	< 2.5			0.06	0.006				9.33	96.2
Upstream	10/08/2022	19	8.02	2.8	< 20	7	1.97	0.13	0.036	0.057	0.006	1.102	529		
Upstream	12/10/2022	11.9	8	4	26	5			0.043	0.014				10.28	95.6
Upstream	17/11/2022	8.3	7.4	< 1	38	4			0.021	0.016				10.72	94.3
Upstream	01/12/2022	4	8.13	1.8	34	34.4			0.026	< 0.02				10.2	100.1
	Mean	**9.639**	**7.942**	**1.635**	**22.583**	**8.079**	**1.828**	**0.084**	**0.080**	**0.016**	**0.013**	**1.406**	**430.000**	**10.951**	**99.200**
	95%ile	**17.680**	**8.162**	**3.340**	**44.750**	**32.530**	**2.087**	**0.124**	**0.262**	**0.038**	**0.019**	**1.844**	**519.100**	**12.782**	**111.475**

		Temperature	pH	BOD	COD	Suspended solids	Total Nitrogen as N	Total Phosphorus as P	Total Ammonia as N	Ortho-Phosphate as P	Nitrite as N	Nitrate as N	Conductivity	DO	DO
Station	Sample Date	Degrees C	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µS/m	mg/l	% sat
Downstream	20/01/2022	5.8	7.59	<1	53	9			<0.02	0.01				12.09	95.1
Downstream	02/02/2022	4.3	7.89	< 1	< 20	3	2.3	< 0.05	0.04	0.01	0.012	1.974		10.4	94.5
Downstream	22/03/2022	5	8.25	< 1	< 20	< 2			0.041	< 0.02					
Downstream	12/04/2022	9.11	7.85	< 1	< 20	4			< 0.02	< 0.006				10.52	91.8
Downstream	13/04/2022	5	8.04	< 1	< 20	< 2			0.3	< 0.02				13.2	112.9
Downstream	17/05/2022	11.4	8.22	< 1	< 20	< 2	< 2	< 0.1	0.026	0.02	< 0.015	1.5	375	12	101.6
Downstream	08/06/2022	14.6	8.1	1	< 20	7.5			< 0.02	< 0.006				11.49	115
Downstream	28/07/2022	16.1	8.09	< 1	< 20	3			0.082	0.008				9.98	101.6
Downstream	10/08/2022	19.1	8.03	2.4	< 20	10	1.72	0.08	< 0.02	0.009	0.006	1.452	564		
Downstream	12/10/2022	11.7	8.1	1.8	21	7			0.029	0.013				9.49	92.5
Downstream	17/11/2022	8.1	7.5	< 1	39	4.4			0.031	0.015				10.61	8.1
Downstream	01/12/2022	4.1	8.12	2.4	23	10			0.03	< 0.02				10.5	100.6
	Mean	**9.526**	**7.982**	**1.105**	**20.761**	**5.179**	**1.811**	**0.062**	**0.053**	**0.011**	**0.010**	**1.642**	**469.500**	**11.028**	**91.370**
	95%ile	**17.450**	**8.234**	**2.400**	**45.300**	**10.000**	**2.242**	**0.079**	**0.180**	**0.017**	**0.012**	**1.927**	**554.550**	**12.701**	**114.055**

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of LOD/sqrt(2) was used in calculating the mean and 95%ile concentrations.