Annual Environmental Report

2019

Quin

D0318-01

CONTENTS

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0318-01, Quin, in Clare 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)

- Quin WWTP with a Plant Capacity PE of 740, the treatment type is 2 - Secondary treatment

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
TPEFF0300D0318SW001	Quin 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 Suspended Solids 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 QUIN WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - QUIN 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
Suspended Solids mg/l	5	300	97.25
COD-Cr mg/l	5	668	260.32
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	5	281.2	107.44
Hydraulic Capacity	N/A	1370	340

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 - TPEFF0300D0318SW001

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	5	1	N/A	102.28	Pass
Suspended Solids mg/l	35	87.5	N/A	5	2	N/A	43.31	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	5	1	1	19.48	Fail
pH pH units	9	9	N/A	5	N/A	N/A	7.92	Pass
Ammonia-Total (as N) mg/l	2	2.4	N/A	5	4	4	24.7	Fail
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	5	4	4	2.79	Fail

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):

Inadequate infrastructure. WWTP upgrade is progressing in 2020.

Significance of Results:

The WWTP was non compliant with the ELVs set in the wastewater discharge licence. There were 4 exceedances for Ortho Phosphate, 4 for Ammonia, 1 for BOD, 2 for Suspended Solids and 1 for COD.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0300D0318SW001

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	141749, 174424	RS27R011200	No	No	No	No	Moderate
Downstream	141609, 174033	RS27R011300	No	No	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 not 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 - QUIN WWTP

2.1.4.1 Treatment Efficiency Report - Quin 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)
COD	34795	17209	51
SS	12999	7287	44
TN	N/A	N/A	N/A
TP	N/A	N/A	N/A
cBOD	14360	3279	77

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

2.1.4.2 Treatment Capacity Report Summary - Quin 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.

Quin WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	500
DWF to the Treatment Plant (m^3/day)	166.5
Current Hydraulic Loading - annual max (m^3/day)	1370

Quin WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	340
Organic Capacity (PE) - As Constructed	740
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1059
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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 - QUIN 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
2	Blocked Sewer	0	2

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 upgrade required to meet ELV	1	Yes	No
Non-compliance	WWTP upgrade required to meet ELV	4	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	5
Number of Incidents reported to the EPA via EDEN in 2019	5
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
SW02	141640, 174125	Yes	Low	Not 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?	Yes
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
D0318-SIP:01	Improvement works to ensure compliance with the emission limit values as set out in Schedule A: Discharges & Discharge Monitoring	C	31/12/2015	Yes	Work ongoing on-site	31/12/2021	

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?	Yes
List reason e.g. additional SWO identified	Capital improvement at WWTP
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?	No
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: 05/04/2020

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

Appendix
Appendix 7.1 - Ambient monitoring summary

			Receiving Waters Designation (Yes/No)					Mean (mg/l)		
Ambient Monitoring Point from WWDL (or as agreed with EPA)	**Irish National Grid Reference (Easting, Northing)**	**EPA Feature Coding Tool code**	**Bathing Water**	**Drinking Water**	**FWPM**	**Shellfish**	**Current WFD Status**	**cBOD**	**o-Phosphate (as P)**	**Ammonia (as N)**
Upstream Monitoring Point	141747.4, 174427.6	RS27R011200	No	No	No	No	Good	2.000	0.036	0.028
Downstream Monitoring Point	140422, 173162	RS27R011300	No	No	No	No	Good	2.000	0.021	0.044
Difference								*0.000*	*-0.015*	*0.016*
EQS								1.500	0.035	0.065
% of EQS								0.000%	-42.857%	24.615%

Ambient Quin 2019

Upstream aSW1u

Parameter	Ammonia N	Dissolved Oxygen % Saturation	Dissolved Oxygen	Temperature	Biological Oxygen Demand	Ortho-Phosphate P	pH	Suspended Solids	Visual Inspection
Max.	--	120	--	--	--	--	9	--	--
Min.	--	80	--	--	--	--	6	--	--
Test Method	--	--	--	--	--	--	--	--	--
Station	mg/l	% O2	mg/l	Degrees C	mg/l	mg/l	pH units	mg/l	Descriptive
Br.In Quin (Rine 25RO1) u/s wwtp	< 0.02	88.9	10.38	8.1	< 2	0.018	7.89	4.4	Clear
Br.In Quin (Rine 25RO1) u/s wwtp	0.039	94	10.95	8.7	< 2	0.019	7.8	2.4	Clear
Br.In Quin (Rine 25RO1) u/s wwtp	0.028	89.3	9.13	15.2	< 2	0.018	7.85	< 2	Clear
Br.In Quin (Rine 25RO1) u/s wwtp	0.024	87	9.57	11.8	< 2	0.015	7.97	3.4	Clear
Br.In Quin (Rine 25RO1) u/s wwtp	0.029	82.1	9.66	7.5	< 2	0.111	7.96	< 2	Clear

Station	Laboratory	Station Reference	Sample Reference	Sample Date	Comments	Analyst Conclusion
Br.In Quin (Rine 25RO1) u/s wwtp	Clare Co Co New Rd	RS27R011200	19-0093	16-Jan-2019	-	-
Br.In Quin (Rine 25RO1) u/s wwtp	Clare Co Co New Rd	RS27R011200	19-0455	13-Mar-2019	-	-
Br.In Quin (Rine 25RO1) u/s wwtp	Clare Co Co New Rd	RS27R011200	19-1202	26-June-2019	-	-
Br.In Quin (Rine 25RO1) u/s wwtp	Clare Co Co New Rd	RS27R011200	19-1803	18-Sep-2019	-	-
Br.In Quin (Rine 25RO1) u/s wwtp	Clare Co Co New Rd	RS27R011200	19-2193	13-Nov-2019	-	-

Downstream aSW1d

Parameter	Ammonia N	Dissolved Oxygen % Saturation	Dissolved Oxygen	Temperature	Biological Oxygen Demand	Ortho-Phosphate P	pH	Suspended Solids	Visual Inspection
Max.	--	120	--	--	--	--	9	--	--
Min.	--	80	--	--	--	--	6	--	--
Test Method	--	--	--	--	--	--	--	--	--
Station	mg/l	% O2	mg/l	Degrees C	mg/l	mg/l	pH units	mg/l	Descriptive
Ford U/S Ardsollus Br - 1300	0.048	89.5	10.42	8.3	< 2	0.027	7.84	4.4	Clear
Ford U/S Ardsollus Br - 1300	0.029	93.4	10.83	8.9	< 2	0.01	7.93	3.6	Clear
Ford U/S Ardsollus Br - 1300	0.053	***77.2***	7.92	15.1	< 2	0.036	7.73	2	Clear
Ford U/S Ardsollus Br - 1300	0.051	85.7	9.46	11.8	< 2	0.015	7.92	< 2	Clear
Ford U/S Ardsollus Br - 1300	0.04	80.6	9.33	8.1	< 2	0.018	8.03	< 2	Clear

Station	Laboratory	Station Reference	Sample Reference	Sample Date	Comments	Analyst Conclusion
Ford U/S Ardsollus Br - 1300	Clare Co Co New Rd	RS27R011300	19-0094	16-Jan-2019	-	-
Ford U/S Ardsollus Br - 1300	Clare Co Co New Rd	RS27R011300	19-0456	13-Mar-2019	-	-
Ford U/S Ardsollus Br - 1300	Clare Co Co New Rd	RS27R011300	19-1203	26-June-2019	-	-
Ford U/S Ardsollus Br - 1300	Clare Co Co New Rd	RS27R011300	19-1804	18-Sep-2019	-	-
Ford U/S Ardsollus Br - 1300	Clare Co Co New Rd	RS27R011300	19-2194	13-Nov-2019	-	-