

Annual Environmental Report

2020



Croom

D0307-01

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7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0307-01, Croom, in Limerick 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.

New Ferric Dosing Installed. Inlet works planned.

1.2 TREATMENT SUMMARY

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

- CROOM WWTP - 2020 with a Plant Capacity PE of 2000, 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
TPEFF1900D0307SW001	CROOM WWTP - 2020	Treated	Non-Compliant	ortho-Phosphate (as P) - unspecified 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 CROOM WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CROOM 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
COD-Cr mg/l	12	1160	278.19
Total Phosphorus (as P) mg/l	12	11.3	3.43
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	605	115.5
Total Nitrogen mg/l	12	48.5	20.94
Hydraulic Capacity	N/A	1982	361

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 - TPEFF1900D0307SW003

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	15.63	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	6.51	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	30	60	N/A	12	N/A	N/A	1.78	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.38	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	N/A	N/A	0.07	Pass
ortho-Phosphate (as P) - unspecified mg/l	1.5	1.8	N/A	12	1	1	0.59	Fail
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.84	

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 Dosing.

Significance of Results:

One Ortho P failure due to inadequate dosing.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1900D0307SW003

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	151270, 141041	RS24M010710	No	No	No	No	Moderate
Downstream	147984, 143791	RS24M010900	No	No	No	No	Moderate

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 (Total) mg/l	RS24M010710	2.039	RS24M010900	1.937	1.5	-6.8
Ammonia-Total (as N) mg/l	RS24M010710	0.048	RS24M010900	0.043	0.065	-6.9
ortho-Phosphate (as P) - unspecified mg/l	RS24M010710	0.081	RS24M010900	0.077	0.035	-12.6

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Temperature °C	RS24M010710	10.525	RS24M010900	11.043		
pH pH units	RS24M010710	8.258	RS24M010900	8.17		
Dissolved Oxygen % O2	RS24M010710	96.4	RS24M010900	95.067		

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.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are: The River Mague Catchment is high in Ortho P due to intensive dairy agriculture.

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 - CROOM WWTP - 2020

2.1.4.1 Treatment Efficiency Report - CROOM 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	698	170	76

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
SS	N/A	1322	N/A
TN	4259	N/A	N/A
COD	56575	3174	94
cBOD	23489	362	98

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

2.1.4.2 Treatment Capacity Report Summary - CROOM 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.

CROOM WWTP - 2020	
Peak Hydraulic Capacity (m³/day) - As Constructed	900
DWF to the Treatment Plant (m³/day)	300
Current Hydraulic Loading - annual max (m³/day)	1982
Average Hydraulic loading to the Treatment Plant (m³/day)	361
Organic Capacity (PE) - As Constructed	2000
Organic Capacity (PE) - Collected Load (peak week)^{Note1}	1682
Organic Capacity (PE) - Remaining	318
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 - CROOM 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)
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	Shock load to the WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment maintenance at WWTP	1	Yes	No
	Plant or equipment breakdown at WWTP	1	No	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Other	WWTP biological sludge issue	1	No	No
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Spillage	Blocked Sewer	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	6
Number of Incidents reported to the EPA via EDEN in 2020	6
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
SW-1	150870, 142070	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW002	151263, 141166	No	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?	No
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/NAY)	Status of Works	Timeframe for Completing the Work	Comments
D0307-SIP:01	Installation of Phosphorus removal facilities	C	01/01/2015	Yes	Works Completed		
D0307-SIP:02	Installation of storm water storage facilities	C	01/01/2015	Yes	Not Started		Capital works not funded in RC3. Capital works funding post 2024 will be contingent on the project being included in the 2025-2029 investment period.

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
Drinking Water Abstraction Point Risk Assessment	Yes	2013	No	

5.1 DRINKING WATER ABSTRACTION POINT RISK ASSESSMENT

The Drinking Water Abstraction Point Risk Assessment Report has been included in the AER 2013

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: 06/05/2021

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 - Ambient monitoring summary

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)				Current WFD Status	Mean (mg/l)		
			Bathing Water	Drinking Water	FWPM	Shellfish		cBOD	o-Phosphate (as P)	Ammonia (as N)
Upstream Monitoring Point	151271, 141042	RS24M010710					Moderate	1.200	0.081	0.031
Downstream Monitoring Point	148000, 143779	RS24M010900	No	No	No	No	Moderate	1.500	0.075	0.036
<i>Difference</i>								<i>0.300</i>	<i>-0.006</i>	<i>0.005</i>
EQS								1.500	0.035	0.065
% of EQS								20.000%	-17.143%	7.692%

Croom Upstream

Location						Parameter						
Station	Station Reference	Station Easting	Station Northing	Sample Reference	Sample Date	Ammonia NH3-N	pH	Biological Oxygen Demand	Dissolved Oxygen % Saturated	Ortho-Phosphate PO4-P	Temperature	
						mg/l	pH units	mg/l	% O2	mg/l	Degrees C	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20370161	14-Jan-2020	0.1	8.1	2.16	90	0.109	6.1	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20370520	11-Feb-2020	0.02	7.9		81	0.117	4.3	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20370975	10-Mar-2020	0.07	8.4	2.27	91	0.097	9.3	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20371281	05-May-2020	0.02	8.4	1	96.1	0.025	9.2	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20371576	09-Jun-2020	0.02	8.4	1	96.3	0.014	13	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20371947	14-Jul-2020	0.02	8.4	1	100	0.074	15.5	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20372211	11-Aug-2020	0.02	8.3	1	108	0.092	17	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20372509	08-Sep-2020	0.02	8.3	1	101	0.09	15.6	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20372841	06-Oct-2020	0.02	8.3	1	101	0.053	11.3	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20373223	03-Nov-2020	0.02	8.2	1	93.7	0.123	8.6	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20373323	10-Nov-2020	0.02	8.2	1	102	0.079	10.9	
WDLM 17 Maigue Br in Croom u/s Croom STP	RS24M010710	151271	141042	20373644	08-Dec-2020	0.02	8.2	1	96.7	0.102	5.5	
EQS Std	individual value					6-9						
EQS Std	good status mean					≤0.065	n/a	≤1.5		≤0.035	n/a	
EQS Std	good status 95%ile					≤0.14	n/a	≤2.6	>80, <120	≤0.075	n/a	
	mean					0.031	8.3	1.2	96.4	0.081	10.5	
	95%ile					0.084	8.4	2.2	104.7	0.120	16.2	
	mean compliance					yes	yes	yes	yes	No	--	
	95%ile compliance					yes	yes	yes	yes	No	--	

half of level of detection for statistical purposes

exceeds Surface Waters Regulations good status

Note: Individual results which exceed the good status mean are highlighted in red

Croom Downstream

Location						Parameter						
Station	Station Reference	Station Easting	Station Northing	Sample Reference	Sample Date	Ammonia NH3-N	pH	Biological Oxygen Demand	Dissolved Oxygen % Saturated	Ortho-Phosphate PO4-P	Temperature	
						mg/l	pH units	mg/l	% O2	mg/l	Degrees C	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20370140	14-Jan-2020	0.12	8.1	3.32	91	0.109	6.1	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20370515	11-Feb-2020	0.06	7.8		82	0.12	4.3	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20370956	10-Mar-2020	0.07	8	2.89	89	0.096	9.2	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20371277	05-May-2020	0.02	8.4	1	97.2	0.02	9	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20371557	09-Jun-2020	0.02	8.2	1	103	0.04	13.2	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20371928	14-Jul-2020	0.02	8.3	1	97.9	0.066	15.6	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20372206	11-Aug-2020	0.02	8.3	1	94.7	0.088	17.1	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20372488	08-Sep-2020	0.02	8.2	1	97	0.088	15.6	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20372836	06-Oct-2020	0.02	8.3	1	97.9	0.047	11.5	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20373221	03-Nov-2020	0.02	8.2	2	93.6	0.122	8.6	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20373302	10-Nov-2020	0.02	8.2	1	101	0.08	11	
At Castleroberts Br Mc8	RS24M010900	148000	143779	20373639	08-Dec-2020	0.02	8.2	1	96.5	0.058	5.5	
EQS Std	individual value					6-9						
EQS Std	good status mean					≤0.065	n/a	≤1.5		≤0.035	n/a	
EQS Std	good status 95%ile					≤0.14	n/a	≤2.6	>80, <120	≤0.075	n/a	
	mean					0.036	8.2	1.5	95.1	0.075	10.6	
	95%ile					0.093	8.3	3.4	101.9	0.121	16.3	
	mean compliance					yes	yes	yes	yes	No	--	
	95%ile compliance					yes	yes	No	yes	No	--	

half of level of detection for statistical purposes

exceeds Surface Waters Regulations good status

Note: Individual results which exceed the good status mean are highlighted in red