Annual Environmental Report

2020

Cavan Town

D0020-01

CONTENTS

7 APPENDIX

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0020-01, Cavan Town, in Cavan 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)

- Cavan WWTP - 2020 with a Plant Capacity PE of 30000, 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
TPEFF0200D0020SW001	Cavan WWTP - 2020	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous BOD) 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 CAVAN WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CAVAN 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
Total Phosphorus (as P) mg/l	12	31.3	8.29
COD-Cr mg/l	12	2498	607.88
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	778	222.58
Total Nitrogen mg/l	12	114.7	55.57
Suspended Solids mg/l	12	1665	340.81
Hydraulic Capacity	N/A	10995	6016

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 - TPEFF0200D0020SW001

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	41.83	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	9.45	Pass
Total Nitrogen mg/l	15	18	N/A	11	2	N/A	11.88	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.88	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	4.6	9.2	N/A	12	1	1	3.02	Fail
Total Phosphorus (as P) mg/l	2	2.4	N/A	12	N/A	N/A	0.26	Pass
Ammonia-Total (as N) mg/l	0.26	0.52	N/A	12	4	2	0.7	Fail
ortho-Phosphate (as P) - unspecified mg/l	0.13	0.26	N/A	12	N/A	N/A	0.05	Pass
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	1157.95	

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):

Refer to Incident Section of Report.

Significance of Results:

The WWTP is non-compliant with the ELV's 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 TPEFF0200D0020SW001

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	241610, 306189	RS36C020200	No	No	No	No	Poor
Downstream	241290, 306913	RS36C020300	No	No	No	No	Poor

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	RS36C020200	2.5	RS36C020300	2.129	1.5	-24.8
Ammonia-Total (as N) mg/l	RS36C020200	0.146	RS36C020300	0.12	0.065	-40
ortho-Phosphate (as P) - unspecified mg/l	RS36C020200	0.069	RS36C020300	0.049	0.035	-58.6
pH pH units	RS36C020200	7.44	RS36C020300	7.7		
Temperature °C	RS36C020200	10.78	RS36C020300	10.95		
Total Phosphorus (as P) mg/l	RS36C020200	0.204	RS36C020300	0.108		
Dissolved Oxygen % Saturation O2	RS36C020200	75.54	RS36C020300	75.92		
Total Nitrogen mg/l	RS36C020200	4.34	RS36C020300	2.38		
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS36C020200	3	RS36C020300	3	1.5	

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: Agriculture and urban diffuse.

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 - CAVAN WWTP - 2020

2.1.4.1 Treatment Efficiency Report - Cavan 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	19178	527	97
TN	128605	24373	81
cBOD	515123	6090	99
COD	1406836	84250	94
SS	788744	19038	98

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

2.1.4.2 Treatment Capacity Report Summary - Cavan 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.

Cavan WWTP - 2020	
Peak Hydraulic Capacity (m^3/day) - As Constructed	20250
DWF to the Treatment Plant (m^3/day)	6750

Cavan WWTP - 2020	
Current Hydraulic Loading - annual max (m^3/day)	10995
Average Hydraulic loading to the Treatment Plant (m^3/day)	6016
Organic Capacity (PE) - As Constructed	30000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	17529
Organic Capacity (PE) - Remaining	12471
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 - CAVAN 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)
Domestic /Septic Tank Sludge	22742	Weight (Tonnes)		1	Yes	Yes	Yes
Landfill Leachate (delivered by tanker)	34803	Volume (m3)		1.6	Yes	Yes	Yes
Waterworks Sludge	2800	Weight (Tonnes)		0.13	Yes	Yes	No

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)
Industrial / Commercial Sludge	312	Volume (m3)		0.01	Yes	Yes	No
Domestic /Septic Tank Sludge	195	Weight (Tonnes)		0.01	Yes	Yes	No

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)
Other	Shock load to the WWTP	1	No	Yes
Breach of ELV	Shock load to the WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Blocked Sewer	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Uncontrolled release	EO caused by ragging or blocking	1	Yes	No
Uncontrolled release	EO caused by pump failure	1	Yes	Yes
Breach of ELV	Inadequate Operational Procedures / Training	1	Yes	Yes
Other	Shock load to the WWTP	1	No	Yes
Other	Shock load to the WWTP	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	13
Number of Incidents reported to the EPA via EDEN in 2020	13
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
SW011. JAMES CONNOLLY STREET	241989, 304550	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW012	242576, 305219	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW015	242481, 303149	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW5	241531, 306329	Yes	High	Meeting	Unknown	Unknown	Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown

SWO Summary	
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 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
D0020-SIP:01	Waste water sewer network improvements (including upgrade of pumping stations)	C	31/12/2014	Yes	Works Completed		
D0020-SIP:02	WWTP upgrade and ancillary works	C	31/12/2014	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
D0020-SIP:03	Upgrade of SWO's to comply with criteria set out in DoEHLG Procedures and Criteria....	C	31/12/2014	Yes	Works Completed		
D0020-SIP:04	Upgrading of emergency overflows from pumping stations so that the overflows do not activate in response to rainfall events or lack of capacity in the sewer network.	C	31/12/2014	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	2015	No	
Small Stream Risk Score Assessment	Yes	2017	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2015

5.2 SMALL STREAM RISK SCORE ASSESSMENT

The Small Stream Risk Score Assessment was not undertaken in 2020.

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	No

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

Signed: Date: 21/05/2021

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

There are no Appendices included