Annual Environmental Report

2018

Castleblayney

D0205-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0205-01, Castleblayney, in Monaghan in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER
There is no Licence Specific Report included in this AER	NA

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant CASTLEBLANEY WWTP with a Plant Capacity PE of 12960. The treatment process includes the following:

1.2.1 CASTLEBLANEY WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screens and Grit Removal
Primary Treatment	No	
Secondary Treatment	Yes	Aeration
Nutrient Removal	Yes	Chemical Dosing for phosphorus removal
Tertiary Treatment	No	

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 2.2 Discharges from the agglomeration.

1.3 ELV Overview

1.3.1 CASTLEBLANEY WWTP

Compliance Status	
Were all parameters compliant for CASTLEBLANEY WWTP treatment plant	No
Where noncompliant see table 2.2.1 for details of parameters	

1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
CASTLEBLANEY WWTP	Cake Sludge	149	Weight (Tonnes)	11.8	Biocore

Annual Statement of Measures

Castleblayney WWTP Upgrade is 65% Completed. Completion date due: Q3 2019. The Design-Build (DB) Works will involve the design, construction, testing and commissioning of:

i) Upgrades and modifications to the existing WwTP.
ii) Approximately 180m of new 900mm diameter sewer from the existing Muckno St. pumping station (PS) to the new inlet PS on the WwTP site.
iii) A new access road to the WwTP site approximately 180m long from the R181 near the existing Muckno PS to the northern side of the WwTP site.
iv) Connection of five existing network PSs to the proposed WwTP SCADA system.
v) Decommissioning the existing wastewater treatment infrastructure on the WwTP site, the existing Muckno PS and other combined sewers along the R181.

2 MONITORING REPORTS SUMMARY

2.1 Summary report on monthly influent monitoring

A summary of influent monitoring for the treatment plant is presented in below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

2.1.1 Influent Monitoring Summary - CASTLEBLANEY WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	11	14.2	6.13
Total Nitrogen mg/l	11	127.8	43.12
COD-Cr mg/l	11	1300	793.61
Suspended Solids mg/l	11	648	317.82
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	11	534	248.21
Hydraulic Capacity	0	4366	1311

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5 if applicable

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - CASTLEBLANEY WWTP

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)
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	10	20	0	12	1	0	4.31	Pass
Suspended Solids mg/l	35	87.5	0	12	1	0	12.74	Pass
ortho-Phosphate (as P) - unspecified mg/l	0	0	0	7	0	0	0.46	Pass
Total Phosphorus (as P) mg/l	0.3	0.36	0	12	9	9	0.49	Fail
Total Nitrogen mg/l	0	0	0	12	0	0	13.91	Pass
COD-Cr mg/l	125	250	0	12	0	0	29	Pass
Temperature °C	25	0	0	9	0	0	8.1	Pass
Ammonia-Total (as N) mg/l	0.5	1	0	12	2	2	0.44	Fail

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)
pH pH units	0	0	0	12	0	0	7.31	Pass

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

Refer to incidents section 3.4

Significance of Results:

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were two exceedances in relation to Ammonia, both of which were above the Condition 2 ELV. There were nine exceedances in relation to Total Phosphorus ELV, all of which were above the Condition 2 ELV. The Impact on receiving water is assessed further in Section 2.3.

2.3 Ambient monitoring summary

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.

2.3.1 Ambient Monitoring Report Summary - CASTLEBLANEY WWTP

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	283028, 319980	TPEFF2400D0205SW001	No	No	No	No	Poor
Downstream	283132, 319880	TPEFF2400D0205SW001	No	No	No	No	Poor

2.3.2 Ambient Monitoring Parameter Summary - CASTLEBLANEY WWTP

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
pH pH units	LS060009402800090	7.8	LS060009402800080	7.62		
Ammonia-Total (as N) mg/l	LS060009402800090	0.08	LS060009402800080	0.07	0.14	-8.1
BOD - 5 days (Total) mg/l	LS060009402800090	4.17	LS060009402800080	3.96	2.6	-8.1
Total Nitrogen mg/l	LS060009402800090	6.31	LS060009402800080	5.88		
Dissolved Oxygen mg/l	LS060009402800090	10.3	LS060009402800080	9.28		
Total Phosphorus (as P) mg/l	LS060009402800090	0.04	LS060009402800080	0.2		
ortho-Phosphate (as P) - unspecified mg/l	LS060009402800090	0.01	LS060009402800080	0.03		
Temperature °C	LS060009402800090	13.4	LS060009402800080	13.75		

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 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 know if it or is not caused by the WWTP.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

3 OPERATIONAL REPORTS SUMMARY

3.1 Treatment Efficiency Report

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:

3.1.1 Treatment Efficiency Report Summary - CASTLEBLANEY WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
TP	4168.37	329.51	92.1	
COD	539226.31	19694.49	96.35	
TN	29300.48	9447.38	67.76	
cBOD	168646.82	2924.23	98.27	
SS	215949.2	8651.36	95.99	

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

3.2 Treatment Capacity Report Summary

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.

CASTLEBLANEY WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	8826
DWF to the Treatment Plant (m^3/day)	2942
Current Hydraulic Loading - annual max (m^3/day)	4366
Average Hydraulic loading to the Treatment Plant (m^3/day)	1311
Organic Capacity (PE) - As Constructed	12960
Organic Capacity (PE) - Collected Load (peak week)	6287
Organic Capacity (PE) - Remaining	6673
Will the capacity be exceeded in the next three years? (Yes/No)	No

3.3 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
14	Blocked Sewer	0	14

3.4 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.

3.4.1 Summary of Incidents

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Non-compliance	Plant or equipment breakdown at WWTP	8	Yes	No
Other	Shock load to WWTP	1	No	Yes

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	9
Number of Incidents reported to the EPA via EDEN in 2018	9

3.5 Sludge / Other inputs to the 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.							

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:

No Appendix Included

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 2018 (No. of events)	Total volume discharged in 2018 (m^3)	Monitoring Status
SW002	282879, 320154	Yes	Low	Not Meeting			Not Monitored
SW003	282942, 319957	Yes	High	Meeting		11043	Monitored
SW005	282401, 320112	No	Low	Not Meeting			Not Monitored
SW006	282841, 319528	No	Low	Not Meeting			Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	
Is each SWO identified as non meeting DoEHLG Guidance included in the Programme of Improvements?	No
The SWO Assessment included the requirements of relevant of WWDL schedules?	No
Have the EPA been advised of any additional SWOs / charges 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)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	C	31/12/2015	Yes	Work on going on site	30-06-2019	Upgrade works involve improvement of the stormwater overflow at the wastewater treatment plant only. The improvement programme will be reviewed by Irish Water for works required to comply with the licence condition on a prioritised basis.

Waste water treatment plant and ancillary works	C	31/12/2015	Yes	Work on going on site	30-06-2019	

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	Improvement Source	Expected Completion Date	Comments
There are no Improvement Programmes 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.

5.1 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 (e.g. Appendix X).
Drinking Water Abstraction Point Risk Assessment	Yes	2013	No	
Priority Substances Assessment	Yes	2012	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	NA
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	No
List reason e.g. changes to monitoring requirements	NA
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	NA

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

Signed: Date: 28/03/2019

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,

Eleanor Roche

Acting Head of Environmental Regulation.

7 APPENDIX

There are no Appendices included.