Annual Environmental Report 2017

Agglomeration Name:	**Castleblayney**
Licence Register No.	**D0205-01**

Contents

Section 1. Executive Summary and Introduction to the 2017 AER

1.1 Summary Report on 2017

This Annual Environmental Report has been prepared for **D0205-01, Castleblayney,** in County **Monaghan**, in accordance with the requirements of the wastewater discharge licence for the agglomeration.

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

- Preliminary Treatment (Screens and Grit Removal)
- Secondary Treatment (Aeration)
- Nutrient Removal (Chemical Dosing for phosphorus removal)

The final effluent from the Primary Discharge Point was non-compliant with the Emission Limit Values in 2017.

The following parameters exceeded the emission limit values in 2017:-

- Total P (mg/l)

1,164,760kgs sludge as dewatered cake was removed from the wastewater treatment plant in 2017.
Sludge was transferred to and Biocore Sludge Treatment Centre Ballivor, Co Meath (SSF_COR_MH_13_0001_02).

The following improvement works were undertaken in 2017:-

Upgrade of WWTP plant and ancillary works
WWAG10001306_002, Castleblayney Sewage Scheme Phase 1 WWTP.
Contract commenced 02/01/18.

An Annual Statement of Measures is included in **Appendix 7.1**

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Table 2.1 Influent Monitoring Summary

2.1.1 Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m3/d)
Number of Samples	12	12	12	12	12	
Annual Max.	780	2440	546	9.2	71.7	5698
Annual Mean	393.54	1067.13	247.31	4.24	47.31	1893.36

Other inputs in the form of sludge/leachate are added to the WWTP after the influent monitoring point and are therefore not represented by influent monitoring. Other inputs, where relevant, are detailed in Section 3.6.

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.

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

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

2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring

2.2.1 Effluent Monitoring Summary	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Ammonia N (mg/l)	pH (Range)
WWDL ELV (Schedule A) where applicable	10.00	125.00	35.00	0.30	0.50	6 to 9
ELV with Condition 2 Interpretation included	20.00	250.00	87.50	0.36	0.60	No allowable exceedances
% Reduction (Schedule A)						
Number of sample results	12	12	12	12	12	12
Number of sample results above WWDL ELV	0	0	1	6	1	0
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	5	0	0
Annual Mean (for parameters where a mean ELV applies)						
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Fail	Pass	Pass

Significance of results

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. Seven samples were non-compliant with the ELVs in relation to TSS (mg/l), Total P (mg/l) and Ammonia (mg/l). The non-compliance is due to ferric dosing issues at the WWTP. The impact on receiving waters is assessed further in Section 2.3.

2.3 Ambient Monitoring Summary

Table 2.3. Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	282870, 320196	IE_NB_06_56				
Downstream Monitoring Point	283132, 319880	IE_NB_06_56	No	No	No	No

Table 2.3.2 Ambient Impact Assessment Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD	0-Phosphate (as P)	Ammonia (as N)	Nitrogen		
Upstream Monitoring Point	Poor	2.71	0.021	0.13925	1.325		
Downstream Monitoring Point	Poor	2.5	0.027	0.16325	1.658		
Difference between Upstream and Downstream		-0.21	0.006	0.024			
EQS		2.6	0.075	0.14			
% of Eqs		-8.08%	8.00%	17.14%			

The results for the upstream and downstream monitoring and/or additional monitoring data sets from Irish Water are included in the Appendix.

Significance of results

- The WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The discharge from the wastewater treatment plant has an observable negative impact on the water quality.
- A deterioration in water quality has been identified however it is not known if it is or is not caused by the WWTP.
- The discharge from the WWTP has no observable negative impact on the Water Framework Directive status.

2.4 Pollutant Release and Transfer Register (PRTR) - report for previous year

A PRTR is not required as the PE is < 100000

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)
Influent mass loading (kg/year)	344,920	935,290	216,756	3,713	41,465
Effluent mass emission (kg/year)	2,911	19,338	8,222	346	15,642
% Efficiency (% reduction of influent load)	99%	98%	96%	91%	62%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	2,942
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	8,826
Hydraulic Capacity – Current loading (m3/day)	1,893
Hydraulic Capacity – Remaining (m3/day)	6,933
Organic Capacity - Design / As Constructed (PE)	12,960
Organic Capacity - Collected Load (PE)	6,356
Organic Capacity – Remaining (PE)	6,604
Will the capacity be exceeded in the next three years? (Yes / No)	No

3.3 Extent of Agglomeration Summary Report

In this section Irish Water is required to report on the amount of urban waste water generated within the agglomeration. It does not include any waste water collected and created in a private system and discharged to water under a Section 4 Licence issued under the Water Pollution Acts 1977 (as amended).

Table 3.3 - Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration	**Estimated / Measured**
Load generated in the agglomeration that is collected in the sewer network	100%	
Load collected in the agglomerations that enters treatment plant	unknown	
Load collected in the sewer network but discharges without treatment (includes SWO, EO, and any discharges that are not treated)	unknown	

Load generated in the agglomeration that is collected in the sewer network is the total load generated and collected in the municipal network within the boundary of the agglomeration.

Load collected in the agglomerations that enters treatment plant is that portion of the previous figure which enters the waste water treatment plant.

Load collected but discharged without treatment is that portion of the first figure which is discharged without treatment.

3.4 Complaints Summary

A summary of complaints of an environmental nature is included below.

Table 3.4 - Complaints Summary Table

Number of Complaints	**Nature of Complaint**	**Number Open Complaints**	**Number Closed Complaints**
7	Investigation Sewage Flooding - Below Ground Waste Water	0	7

3.5 Reported Incidents Summary

A summary of reported incidents is included below.

Table 3.5.1 - Summary of Incidents

3.5.1 Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted. Note 1	Reported to EPA (Yes/No)	Closed (Yes/No)
INCI011594, Uncontrolled release	Emergency overflow caused by double pump failure at Muckno Streeet Pump Station	EO caused by pump failure	1	No	Caretaker responded to alarm upon receiving message. Electrical contractor fixed the issue with the electrical panel.	EPA , IFI	Yes	Yes
INCI010131, Non - compliance	Failure to meet the ELV for Total P	Other	5	Yes	Ferric dosing rate adjusted. Source control investigations ongoing in Castleblayney town area	EPA , IFI	Yes	Yes

Note 1: For shellfish waters notify the Marine Institute (MI) Sea Fisheries Protection Authority (SFPA) Food Safety Authority (FSAI) and An Bord Iascaigh Mhara (BIM). This should also include any other authorities that should be contacted arising from the findings of any Licence Specific Reports also e.g. Drinking Water Abstraction Impact Risk Assessment, Fresh Water Pearl Mussel Impact Assessments etc.

Table 3.5.2 - Summary of Overall Incidents

Number of Incidents in 2017	6
Number of Incidents reported to the EPA via EDEN in 2017	6
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

Other inputs to the waste water treatment plant are summarised in Table 3.6 below.

Table 3.6 - Other Inputs

Input Type	Quantity	P.E.	% of load to WWTP	Included in Influent Monitoring? (Y/N)	Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)	
Domestic /Septic Tank Sludge	12 m3	0	0.00%	Yes	Yes	No	
Waterworks Sludge	0 m3						
Industrial / Commercial Sludge	0 m3						
Landfill Leachate (delivered by tanker)	0 m3						
Landfill Leachate (delivered by sewer network)	0 m3						
Other (specify)	520 m3	6	0.07%	Yes	Yes	No	IW COA sites, Oram And Annyalla

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

A summary of the Storm Water Overflow significance and operation is included below. The Stormwater Overflow Assessment was submitted previously in AER 2015.

Table 4.1.1 - SWO Identification and Inspection Summary Report

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High/Med/ Low)	Compliance with DoEHLG criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017 (m3)	Total volume discharged in 2017 (P.E.)	Estimated / Measured data
SW002	282879, 320154	Yes	Low	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW003	282942, 319957	Yes	High	Compliant	58	11668	142	Measured
SW005	282401, 320112	No	Low	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW006	282841, 319528	No	Low	Non-Compliant	Unknown	Unknown	Unknown	Estimated

Table 4.1.2 - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m3/yr)?	Unknown
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2013?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	No

The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	Yes
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1 ?	Yes

4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.

The Improvement Programme is included in Appendix: 7.1 and addresses the **Specified Improvement Programmes** as detailed in Schedules A3 and C of the WWDL.

Table 4.2.1 - Specified Improvement Programme Summary

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Construction Work Completed	Expected Completion Date	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	Not started			
Waste water treatment plant and ancillary works	C	31/12/2015	Yes	At planning stage	0%	Q3 Main Upgrade works and 1 year process proving	Contractor onsite 02/02/18

A summary of the status of any improvements identified by under Condition 5.2 is included below.

Table 4.2.2 - Improvement Programme Summary

Improvement Identifier / Name	Improvement Description	Improvement Source	Progress (% complete)	Expected Completion Date	Comments
Critical Asset Programme	Flow Monitoring and Sampling MN	Improved Operational Control	100%		Four mag meters installed in 2016
Drinking Water Point Risk Assessment (condition 4)	Assessment to investigate the relocation of primary discharge point	Drinking Water Abstraction Risk Assessment (Condition 4)	0%	Unknown	

Table 4.2.3 - Sewer Integrity Risk Assessment Tool Summary

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Reference to relevant section of AER (e.g. Appendix 2 Section 4.	Specified improvements	Comment
Hydraulic Risk Assessment Score	High	110	AER 2016		
Environmental Risk Assessment Score	Low	127	AER 2016		
Structural Risk Assessment Score	Medium	78	AER 2016		
Operation & Maintenance Risk Assessment Score	Low	60	AER 2016		
Overall Risk Score for the agglomeration	High	375	AER 2016		

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required by Condition 5 in Licence	Required in this AER or outstanding from previous AER?	Included in this AER?	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Required	No	No	AER 2012
Drinking Water Abstraction Point Risk Assessment	Required	No	No	AER 2013
Shellfish Impact Assessment	Not Required	No	No	
Pearl Mussel Report	Not Required	No	No	
Toxicity/Leachate Management	Not Required	No	No	
Toxicity of Final Effluent Report	Not Required	No	No	
Small Stream Risk Score Assessment	Not Required	No	No	
Habitats Impact Assessment	Not Required	No	No	

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	Yes	None
Drinking Water Abstraction Point Risk Assessment	Yes	Assessment to investigate options to relocate the primary discharge
Shellfish Impact Assessment	No	
Pearl Mussel Report	No	
Toxicity/Leachate Management	No	
Toxicity of Final Effluent Report	No	
Habitats Impact Assessment	No	

5.1 Priority Substances Assessment

The Priority Substance Assessment Report was submitted previously in AER 2012. A summary of the significance and operation is included below.

Table 5.1 - Priority Substance Assessment Summary Report

Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance?	Desktop Study and Screening Analysis
Does the assessment include a review of Trade inputs to the works?	No
Does the assessment include a review of other inputs to the works?	No
Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)	No
Does the assessment identify that priority substances may be impacting the receiving water?	No
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	No
Recommendations	None
Status of any improvement measures required	N/A

5.2 Drinking Water Abstraction Point Risk Assessment

The Drinking Water Risk Assessment was submitted previously in AER 2013. A summary of the significance and operation is included below.

Table 5.2 - Drinking Water Abstraction Point Risk Assessment Summary

Is a Drinking Water Abstraction Risk Assessment required in the 2017 AER (or outstanding from a previous AER)?	No
Does the Drinking Water Abstraction Risk Assessment identify whether any of the discharges in Schedule A of the licence pose a risk to a drinking water abstraction?	No
Does the assessment identify if any other discharge(s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)?	Yes
What is the overall risk ranking applied by the licensee?	Medium
Does the risk assessment consider the impacts of normal operation?	Yes
Does the risk assessment consider the impacts of abnormal operation (e.g. incidents /overflows)?	Yes
Does the risk assessment include control measures for each risk identified?	Yes
Does the risk assessment consider operational control measures?	Yes
Does the risk assessment include infrastructural control measures?	No
Recommendations	Assessment to investigate options to relocate the primary discharge
Does the Improvement Programme for the agglomeration include control measures / corrective actions to eliminate / reduce priority substances identified as having an impact on receiving water quality?	No
Status of any improvement measures required.	Unknown

Section 6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

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	IW requested a Tech amendment to include SW005 and SW006 Nov 2017.
Is there a need to request/advise the EPA of any modifications to the existing WWDL? Refer to Condition 1.7 (changes to works/discharges) & Condition 4 (changes to monitoring location, frequency etc.)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	Yes
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	N/A
Ensure the following reports are included	

Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2017 AER.
- Monitoring Reports Summary.
- Operational Reports Summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports
- Certification and Sign Off
- Appendices

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

Signed:  Date: 01-03-2018

Michael O'Leary
Acting Head of Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures / Improvement Programme

Upgrade of Waste water treatment plant and ancillary works
WWAG10001306_002, Castleblayney Sewage Scheme Phase 1 WWTP.
Contract commenced 02/01/18.

Appendix 7.2 Ambient Monitoring

Upstream

Date	Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	Total N (mg/l)	D.O. (% Sat)	D.O. (mg/l)	pH (mg/l)	Total Phosphorus mg/l
24/01/2017	0.97	0.05	1.60	4.10		10.10	7.90	0.06
08/02/2017	0.04	0.03	2.50	1.40		10.60	7.70	0.05
15/03/2017	0.03	0.02	1.50	1.40		9.79	7.60	0.04
05/04/2017	0.03	0.02	2.80	0.50		10.48	7.90	0.04
09/05/2017	0.16	0.02	6.90	0.50		10.03	8.10	0.10
14/06/2017	0.08	0.00	3.40	2.00		9.98	7.90	0.07
04/07/2017	0.08	0.02	2.80	0.50		10.19	8.10	0.04
09/08/2017	0.04	0.01	3.70	0.50		11.51	8.40	0.03
06/09/2017	0.02	0.00	2.50	1.60		9.45	7.70	0.05
03/10/2017	0.08	0.04	2.60	2.50		8.61	7.40	0.08
08/11/2017	0.08	0.03	0.50	0.50		9.89	7.60	0.04
12/12/2017	0.06	0.03	1.80	4.00		10.21	7.60	0.05
Mean	0.14	0.02	2.72	1.63		10.07	7.83	0.05
95%ile	0.52	0.04	5.14	4.05		11.01	8.24	0.09

Downstream

Date	Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	Total N (mg/l)	D.O. (% Sat)	D.O. (mg/l)	pH (mg/l)	Total Phosphorus mg/l
24/01/2017	1.20	0.03	1.90	4.60		10.42	7.90	0.06
08/02/2017	0.05	0.04	2.40	1.50		10.40	7.60	0.05
15/03/2017	0.03	0.02	1.40	1.60		9.10	7.50	0.05
05/04/2017	0.05	0.00	2.60	0.50		10.78	7.70	0.04
09/05/2017	0.29	0.07	6.10	1.10		8.43	8.10	0.16
14/06/2017	0.06	0.01	3.10	2.80		9.67	7.80	0.07
04/07/2017	0.02	0.00	2.60	0.50		10.44	8.10	0.04
09/08/2017	0.02	0.01	3.40	0.50		11.16	8.20	0.03
06/09/2017	0.02	0.01	2.50	0.50		9.79	7.70	0.05
03/10/2017	0.07	0.05	2.00	0.50		8.72	7.50	0.09
08/11/2017	0.07	0.04	0.50	1.40		9.72	7.50	0.06
12/12/2017	0.07	0.03	1.60	4.40		11.02	7.60	0.05
Mean	0.16	0.03	2.51	1.66		9.97	7.77	0.06
95%ile	0.70	0.06	4.62	4.49		11.08	8.15	0.12