

Annual Environmental Report 2017

Agglomeration Name:	Monaghan
Licence Register No.	D0061-01



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Section 1. Executive Summary and Introduction to the 2017 AER

1.1 Summary Report on 2017

This Annual Environmental Report has been prepared for **D0061-01, Monaghan**, 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 37400. The treatment process includes the following:-

- Preliminary Treatment (Screening)
- Primary Treatment (Settlement)
- Secondary Treatment (Aeration)
- Nutrient Removal (Chemical dosing for phosphorus removal)

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

3,298,610kgs 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:-

1. *Issue* *To maintain processing levels of all incoming sludges*
Measure *Upgrade sludge dewatering unit, capital project*
Status *100% complete 2017*

2. *Issue* *Ferric dosing system not online*
Measure *Replacement of ferric dosing equipment*
Status *75% complete*

3. *Issue* *Diffusers in aeration tank are ruptured and require replacement*
Measure *Replacement of air blowers, capital project*
Status *65% complete*

4. *Issue* *Measures identified in 2015 SWO assessment*
Measure *Implement measures*
Status *A drainage area plan for Monaghan started in 2017 and will take approximately 2 years to complete. The DAP will encompass both Storm Water Overflow and Network assessments and will therefore comprehensively address the need to carry out separate Storm Water Overflow or Sewer Integrity Assessments at this time.*

5. *Issue* *Grit Trap Failed*
Measure: *Refurbishment required*
Status *100% complete*

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	26	26	26	26	26	
Annual Max.	271	1329	571	7.8	157.8	13504
Annual Mean	149.57	438.66	176.99	2.85	42.71	3854.64

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 design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliant with Emission Limit Values.

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)	pH (Range)	Comment
WWDLELV (Schedule A) where applicable	25.00	125.00	25.00	2.00	6 to 9	Note: New ELV for BOD of 3.5 mg/l will apply from the 31/12/19; 0.1 ELV will apply for Ortho-p from the 31/12/19; 0.2 ELV will apply for Ammonia from the 31/12/19.
ELV with Condition 2 Interpretation included	50.00	250.00	62.50	2.40		
% Reduction (Schedule A)						
Number of sample results	26	26	26	26	26	
Number of sample results above WWDLELV	1	0	0	1	0	
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	0	0	
Annual Mean (for parameters where a mean ELV applies)						
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Pass	Pass	

Significance of results

The WWTP was compliant with the ELV's set in the wastewater discharge licence.

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	267812, 333762	RS03S010270				
Downstream Monitoring Point	267939, 334666	RS03S010400	No	No	No	No
Downstream Monitoring Point #2						

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	2.925	0.13075	0.21			
Downstream Monitoring Point	Poor	4.46	0.1374	1.38			
Downstream Monitoring Point #2							
Difference between Upstream and Downstream		1.535	6.649999999999999E-03	1.17			
Difference between Upstream and Downstream #2							
EQS		2.6	0.075	0.14			
% of Eqs		59.04%	8.87%	835.71%			
% of Eqs #2							

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 compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.

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)	198,233	581,360	234,565	3,778	56,599
Effluent mass emission (kg/year)	7,172	58,297	9,070	1,346	42,846
% Efficiency (% reduction of influent load)	96%	90%	96%	64%	24%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	7,944
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	37,008
Hydraulic Capacity – Current loading (m3/day)	3,855
Hydraulic Capacity – Remaining (m3/day)	33,153
Organic Capacity - Design / As Constructed (PE)	37,400
Organic Capacity - Collected Load (PE)	11,081
Organic Capacity – Remaining (PE)	26,319
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%	Estimated
Load collected in the agglomerations that enters treatment plant	Unknown	Estimated
Load collected in the sewer network but discharges without treatment (includes SWO, EO, and any discharges that are not treated)	Unknown	Estimated

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
15	Investigation Sewage Flooding_ Below Ground	0	15

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)
Uncontrolled Release	Discharge to the River Shambles via an old SWO during dry weather.	Blocked sewer	1	No	Sewer unblocked 08/05/17, Works were carried out to block up the old SWO 25/08/17	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	1
Number of Incidents reported to the EPA via EDEN in 2017	1
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	998 m ³	12	0.07%	Yes	Yes	No	
Waterworks Sludge	7,582 m ³	92	0.54%	Yes	Yes	No	* Only 10% of Waterworks sludge goes through the plant, the remaining 90% goes directly to the sludge handling facilities onsite.
Industrial / Commercial Sludge	500 m ³	5	0.04%	Yes	Yes	No	
Landfill Leachate (delivered by tanker)	34,384 m ³	419	2.44%	Yes	Yes	No	
Landfill Leachate (delivered by sewer network)	0 m ³						
Other (specify)	15,438 m ³	188	1.09%	Yes	Yes	No	Other Co Monaghan IW WWTP's

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	267845E 333776N	Yes	High	Compliant	46	1427	17.37	Estimated
SW003	267405E 333531N	Yes	High	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW005	267123E 333596N	Yes	Medium	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW006	266996E 333605N	Yes	Medium	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW007	267045E 333500N	Yes	Medium	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW008	267324E 333645N	Yes	Medium	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW009	267123E 333500N	Yes	Medium	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 ?	N/A

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. It should detail other improvements identified through assessments required under the licence.

There are no Specified Improvements required in the Licence.

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
Upgrade dewatering unit	Upgrade of Monaghan Sludge dewatering unit	Improved Operational Control	100%		Complete 2016, process proving 2017
Flow monitoring and sampling	Flow monitoring and sampling	Improved Operational Control	100%		Event monitor installed 2017
Upgrade air blowers	Upgrade of air blower units	Improved Operational Control	65%		
Replacement of Ferric dosing equipment	Replacement of Ferric dosing equipment	Improved Operational Control	75%	01/03/2018	
Provide sludge reception facilities	Provide Sludge Reception facilities	Improved Operational Control	0%	31/12/2018	Contractor onsite 29/01/18

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	150	Appendix 7.3 AER 2016		
Environmental Risk Assessment Score	Low	500	Appendix 7.3 AER 2016		
Structural Risk Assessment Score	High	150	Appendix 7.3 AER 2016		
Operation & Maintenance Risk Assessment Score	Medium	200	Appendix 7.3 AER 2016		
Overall Risk Score for the agglomeration	High	1000	Appendix 7.3 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 2016
Drinking Water Abstraction Point Risk Assessment	Not Required	No	No	
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	No further screening required
Drinking Water Abstraction Point Risk Assessment	No	
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 2016. 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 and Screening Analysis
Does the assessment include a review of Trade inputs to the works?	Yes
Does the assessment include a review of other inputs to the works?	Yes
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)	
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	No further screening required
Status of any improvement measures required	National Dangerous Substances Effluent Monitoring Programme commenced 2017

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?	No
List reason e.g. additional SWO identified	N/A
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)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	Yes
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: 28/02/2018

Michael O'Leary
Acting Head of Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures / Improvement Programme

1. Issue To maintain processing levels of all incoming sludges
 Measure Upgrade sludge dewatering unit, capital project
 Status 100% complete 2017

2. Issue Ferric dosing system not online
 Measure Replacement of ferric dosing equipment
 Status 75% complete

3. Issue Failed asset screener
 Measure Replacement of gearbox and motor on 1 No screener
 Status To be included on inlet upgrade minor capital contract, see item 6 below.

4. Issue Diffusers in aeration tank are ruptured and require replacement
 Measure Replacement of air blowers , capital project
 Status 65% complete

5. Issue Measures identified in 2015 SWO assessment
 Measure Implement measures
 Status A drainage area plan for Monaghan started in 2017 and will take approximately 2 years to complete. The DAP will encompass both Storm Water Overflow and Network assessments and will therefore comprehensively address the need to carry out separate Storm Water Overflow or Sewer Integrity Assessments at this time.

6. Issue Provide Sludge reception facilities, improved operational control
 Measure Monaghan WWTP Sludge reception facilities
 Status Contractor onsite 29/01/18

7. Issue Grit Trap Failed
 Measure: Refurbishment required
 Status 100% complete

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)	Temp °C
21/02/2017	0.26	0.08	2.90	1.80		7.84	7.80	9.50
28/06/2017	0.19	0.05	3.70	0.50		6.01	7.70	15.10
20/09/2017	0.26	0.79	2.00	4.90		7.73	8.00	14.00
15/11/2017	0.16	0.32	3.10	7.80		6.82	7.60	8.62
Mean	0.22	0.31	2.93	3.75		7.10	7.78	11.81
95%ile	0.26	0.72	3.61	7.37		7.82	7.97	14.94

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)	Temp °C
21/02/2017	4.90	0.13	9.50	15.40		6.87	7.60	9.90
28/06/2017	0.38	0.31	2.90	6.40		5.84	7.70	15.40
20/09/2017	0.22	0.18	2.40	7.20		7.92	7.80	14.10
15/11/2017	0.10	0.04	2.10	0.50		7.31	7.90	7.92
Mean	1.40	0.16	4.23	7.38		6.99	7.75	11.83
95%ile	4.22	0.29	8.51	14.17		7.83	7.89	15.21