Annual Environmental Report

2018

Tullyallen

D0266-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0266-01, Tullyallen, in Louth 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 Reports included in the AER.	

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Tullyallen WWTP with a Plant Capacity PE of 1800. The treatment process includes the following:

1.2.1 Tullyallen WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	including screening / grit removal
Primary Treatment	No	
Secondary Treatment	Yes	conventional activated sludge
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 Tullyallen WWTP

Compliance Status	
Were all parameters compliant for Tullyallen WWTP treatment plant	Yes
Where non compliant 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
Tullyallen WWTP	Liquid Sludge	161.8	Weight (Tonnes)	1.93	Dundalk WWTP
Tullyallen WWTP	Liquid Sludge	2129.2	Weight (Tonnes)	1.81	Drogheda WWTP

Annual Statement of Measures

There were no major capital or operational changes undertaken.

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 - Tullyallen WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr mg/l	9	816	304
Total Nitrogen mg/l	6	88.9	38.2
Total Phosphorus (as P) mg/l	7	10.9	4.65
Suspended Solids mg/l	9	316	146.49
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	9	419	146.37
Hydraulic Capacity		1064.6	410.52

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 - Tullyallen 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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Suspended Solids mg/l	35	87.5	0	6	0	0	13.86	Pass
Total Nitrogen mg/l	0	0	0	6	0	0	8.8	N/A
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	6	0	0	5.53	Pass
Total Oxidised Nitrogen (as N) mg/l	0	0	0	1	0	0	12.48	N/A
Ammonia-Total (as N) mg/l	2	2.4	0	6	0	0	0.2	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	0	6	0	0	0.27	Pass
COD-Cr mg/l	125	250	0	6	0	0	25.92	Pass
pH pH units	6 to 9	0	0	6	0	0	7.35	Pass

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):

Not Applicable.

Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

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 - Tullyallen 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	304565, 276166	TPEFF2100D0266SW001	Yes	No	No	No	Good
Downstream	305362, 275577	TPEFF2100D0266SW001	Yes	No	No	No	Moderate

2.3.2 Ambient Monitoring Parameter Summary - Tullyallen WWTP

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient Monitoring Summary**

Significance of Results:

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

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

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

Based on the EPA Beaches.ie data monitoring results, it is not considered that the Tullyallen WWTP discharge is impacting on the Laytown Bathing Area.

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 - Tullyallen WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
cBOD	24218.31	927.53	96.17
COD	50300.28	4348.31	91.36
SS	24238.01	2324.81	90.41
TN	6334.46	1475.8	76.7

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.

Tullyallen WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	1125
DWF to the Treatment Plant (m^3/day)	375

Tullyallen WWTP	
Current Hydraulic Loading - annual max (m^3/day)	1064.6
Average Hydraulic loading to the Treatment Plant (m^3/day)	410.52
Organic Capacity (PE) - As Constructed	1800
Organic Capacity (PE) - Collected Load (peak week)	1737
Organic Capacity (PE) - Remaining	63
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
There is no Complaint data included in the AER.			

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)
There is no Incident data included in the AER.				

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	0
Number of Incidents reported to the EPA via EDEN in 2018	0
Explanation of any discrepancies between the two numbers above	N/A

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	305191, 275881	Yes	Low	Meeting	0		Not Monitored
SW003- TO STORM TANK IN WWTP	305191, 275881	No	Low	Meeting	0		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)?	Not Monitored
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 / charges to Schedule C3 and A4 under Condition 1.7?	Yes

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
There are no Specified Improvement Programmes for this Agglomeration.						

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 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	2016	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?	Yes
List reason e.g. additional SWO identified	Additional SWO
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	N/A
Have these processes commenced?	Yes
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

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

Date: 19/03/2019

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

Appendix
Appendix 7.1 - Ambient Monitoring Summary

Tullyallen 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)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Upstream Monitoring Point	304565, 276166	RS07B042200					Moderate	
Downstream Monitoring Point	305362, 275577*	TW21001002B E1009	No	No	No	No	Moderate	No

* Transitional Water. Most recently available EPA TRAC data (from 2016) used.

Significance of results

- The WWTP was compliant with the ELVs set in the wastewater discharge licence.
- The discharge from the WWTP has no observable negative impact on the Water Framework Directive status.
- The discharge from the WWTP has no observable negative impact on water quality.
- Based on the EPA Beaches.ie data monitoring results, it is not considered that the Tullyallen WWTP discharge is impacting on the Laytown Bathing Area.

Ambient Monitoring Data

Upstream Results								
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)
18/01/2018	U/S	0.14	0.028	1.7	3.5	95	12.2	8.2
08/03/2018	U/S	0.066	0.021	1.1	3.6	99	12.5	8.2
12/04/2018	U/S	0.027	<0.01	<1	3.3	98	11.4	8.2
01/05/2018	U/S	<0.02	<0.01	<1	2.8	102	11.2	8.3
15/06/2018	U/S	<0.02	<0.01	<1	2.2	98	9.4	8.2
11/07/2018	U/S	<0.02	<0.01	1.4	1.5	114	10.2	8.3
Mean		**0.044**	**0.012**	**0.800**	2.8	101.0	11.15	8.23
95%ile		**0.122**	**0.026**	**1.550**	3.6	111.0	12.43	8.30

Downstream Transitional Results								
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)
12/01/2016	D/S	<0.05	<0.23	<1.12	4.9		10.96	8.08
05/04/2016	D/S	0.07	<0.23	<1.12			10.12	8.03
05/07/2016	D/S	<0.41	<0.6	2	2.5		9.1	8.5
04/10/2016	D/S	<0.41	<0.6	<1	3		8.6	8.5
Mean		**0.121**	**0.208**	**0.905**	3.5		9.70	8.28
95%ile		**0.205**	**0.300**	**1.784**	4.7		10.83	8.50

** Where the concentration in the result is less than the limit of detection (LOD), a value of 50% of the LOD was used in calculating the mean and 95%ile concentrations.*

Bathing Water Quality Results

The 2 beaches are located at:

1. Laytown / Bettystown
2. Seapoint (Louth)

The Bathing Water Quality limits are shown below:

microbiological parameters	Guide	Mandatory
E.Coli (no/100ml)	<=250	<=2 000
Enterococci (no/100ml)	<=100	

1. **Laytown / Bettystown**

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
10/09/2018	663	1000	Poor
03/09/2018	<10	1	Excellent
27/08/2018	74	8	Excellent
20/08/2018	41	6	Excellent
13/08/2018	41	9	Excellent
07/08/2018	<10	2	Excellent
30/07/2018	19	15	Excellent
23/07/2018	52	40	Excellent
16/07/2018	20	5	Excellent
09/07/2018	<10	4	Excellent
02/07/2018	<10	<1	Excellent
25/06/2018	<10	1	Excellent
18/06/2018	<10	<1	Excellent
11/06/2018	<10	<1	Excellent
05/06/2018	30	9	Excellent
22/05/2018	<10	1	Excellent

Laytown / Bettystown Beach results exceeded the guided limit for samples taken on 10/09/2018 for Escherichia coli and Intestinal enterococci. The mandatory limit for Intestinal enterococci was not exceeded on this date. Results were compliant on all other sampling dates for 2018.

Laytown/Bettystown is classified as achieving Good Water Quality in 2018 based on the assessment of bacteriological results for the period 2015 to 2018. Laytown/Bettystown has achieved a Good Water Quality rating for the four consecutive years 2015 to 2018.

2. Seapoint Beach (Louth)

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
10/09/2018	86	14	Excellent
03/09/2018	86	7	Excellent
28/08/2018	20	6	Excellent
27/08/2018	62	23	Excellent
21/08/2018	10	8	Excellent
20/08/2018	75	17	Excellent
14/08/2018	<10	7	Excellent
13/08/2018	52	25	Excellent
07/08/2018	<10	4	Excellent
01/08/2018	<10	1	Excellent
30/07/2018	52	13	Excellent
23/07/2018	52	3	Excellent
16/07/2018	30	3	Excellent
09/07/2018	<10	2	Excellent
02/07/2018	<10	1	Excellent

Seapoint Escherichia coli and intestinal enterococci results were below the guided limit and mandatory limit for all samples taken in 2018.

Seapoint is classified as achieving Excellent Water Quality in 2018 based on the assessment of bacteriological results for the period 2015 to 2018. Seapoint has achieved an Excellent Water Quality rating for the four consecutive years 2015 to 2018.