Annual Environmental Report

2019

Letterkenny

D0009-01

CONTENTS

7 APPENDIX

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0009-01, Letterkenny, in Donegal 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.

The following were completed in 2019: Ballyraine Potable Water repair, New Scada System "Ignition". Sludge Centre - New Tank mixers installed, Decant lines placed on liquid sludge intake, pre-digestor roof replaced, GBT pumps replaced post machine External lighting replaced on all sites. Groveburn sewer line increased and upgraded CCTV installed at WWTW.

1.2 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- Letterkenny WWTP with a Plant Capacity PE of 40000, 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
TPEFF0600D0009SW001	Letterkenny WWTP	Treated	Non-Compliant	ortho-Phosphate (as P) - unspecified 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 LETTERKENNY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - LETTERKENNY WWTP

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
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	374	201.08
Total Nitrogen mg/l	12	51.3	34.24
Suspended Solids mg/l	12	434	234.8
COD-Cr mg/l	12	2200	449.08
Total Phosphorus (as P) mg/l	12	11.92	4.24
Hydraulic Capacity	N/A	13203	8530.25

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 - TPEFF0600D0009SW001

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	0	0	23.99	Pass
Suspended Solids mg/l	35	87.5	N/A	12	0	0	6.56	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	0	0	1.83	Pass
Temperature °C	25	N/A	N/A	11	0	N/A	4.37	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	12	0	0	2.83	Pass
pH pH units	9	9	N/A	12	0	0	7.26	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	0	0	1.22	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	1	1	0.39	Fail
Nitrite (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.11	
Nitrate (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	2.78	

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)
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	5.34	
Conductivity 20 C µS/cm	N/A	N/A	N/A	12	N/A	N/A	537.64	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.52	
Fats, Oils & Greases mg/l	N/A	N/A	N/A	3	N/A	N/A	5	

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 the 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 TPEFF0600D0009SW001

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
The ambient results are included in the Appendix 7.1 - Ambient monitoring summary							

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results do 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 is caused by the WWTP.

Other causes of deterioration in water quality in the area are unknown.

The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - LETTERKENNY WWTP

2.1.4.1 Treatment Efficiency Report - Letterkenny WWTP

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	13201	1579	88

SS	731045	19938	97
COD	1398243	72965	95
cBOD	626068	5557	99
TN	106612	16237	85

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

2.1.4.2 Treatment Capacity Report Summary - Letterkenny WWTP

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.

Letterkenny WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	32400
DWF to the Treatment Plant (m^3/day)	10800
Current Hydraulic Loading - annual max (m^3/day)	13203
Average Hydraulic loading to the Treatment Plant (m^3/day)	8530.25
Organic Capacity (PE) - As Constructed	40000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	23014
Organic Capacity (PE) - Remaining	16986
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 - LETTERKENNY 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)
Domestic /Septic Tank Sludge	31488.4	Weight (Tonnes)		0	No	Yes	Yes
Waterworks Sludge	23733	Volume (m3)	289	0.76	Yes	Yes	Yes
Landfill Leachate (delivered by tanker)	39029	Weight (Tonnes)		0	Yes	Yes	Yes
Other	9653	Weight (Tonnes)		0	No	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
There were no relevant environmental complaints in 2019.			

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)
There were no reportable incidents in 2019.				

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	0
Number of Incidents reported to the EPA via EDEN in 2019	0
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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW2	216369, 410914	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW3	216677, 410864	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW4	216700, 410885	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW6	216700, 410885	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW8	217847, 410854	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored

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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
TBC	TBC	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
SW11	218445, 411415	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW5	216700, 410885	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW7	217342, 410952	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW9	217847, 410854	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	217331.5 , 410867.3	No	Low	Meeting	0	0	Monitored
TBC	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
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?	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)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0009-SIP:01	Cessation of hydraulic bypass system at the WWTP	C	31/12/2012	Yes	Works Completed	31/01/2019	
D0009-SIP:02	Installation of new outfall diffuser at primary discharge point	C	31/12/2012	Yes	Works Completed	31/01/2019	

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
D0009-SIP:05	SW017 to cease, or be upgraded to SWOs as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:07	SW003 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:09	SW005 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:13	SW009 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:14	Upgrading of Storm Water Overflows to comply with DoEHLG criteria	C	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:03	Installation of new storm water storage tanks at Ballyraine	C	31/12/2012	Yes	Works Completed	31/01/2019	
D0009-SIP:04	SW016 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:06	SW002 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	

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
D0009-SIP:08	SW004 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:10	SW006 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:11	SW007 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:12	SW008 to cease, or be upgraded to SWO as per DoEHLG criteria	A	31/12/2013	Yes	Work ongoing on-site	31/12/2021	
D0009-SIP:15	WWTP upgrade and improvement works	C	31/12/2012	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
D0009-IP:54	Ballyraine Potable Water repair, New Scada System	Improved Operational Control	01/12/2019	
D0009-IP:55	Improvements to Sludge Centre	Other	01/12/2019	

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.

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	
Shellfish Impact Assessment	Yes		No	
Toxicity of Final Effluent	Yes		No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

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

5.2 SHELLFISH IMPACT ASSESSMENT

The Shellfish Impact Assessment Report has not been included in the AER.

5.3 TOXICITY OF FINAL EFFLUENT

The Toxicity of Final Effluent Report has not been included in the AER.

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	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	No
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: 24/04/2020

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

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambient Points

Ambient Monitoring Point from WWDL (or as agreed with EPA)	***Irish Grid Reference***	**EPA Feature Coding Tool code**	**Receiving Waters Designation (Y/N)**				**WFD Status**
			Bathing Water	**Drinking Water**	**FWPM**	**Shellfish**	
Upstream	220354, 412312	TFEFF0600D009SW001	No	No	No	No	Moderate
Downstream	220389, 412589	TPEFF0600D0009SW001	No	No	No	No	Moderate

Municiple	Entity Name	Month	Location	Lab Ref	Date	pH	Temperature	Conductivity @ 20°C	DO	BOD	COD	Suspended Solids	Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Orthophosphate	Total Nitrogen	TON	Dissolved Inorganic Nitrogen DIN	Total Phosphorus	E coli	Faecal Coliforms (E. coli)	Enterococci	Salinity	SSRS	Chlorophyll
letterkenny	Swilly	April	Letterkenny - Upstream	192502322	11-Apr-19	7.86	NT	NT	95.4	<1	NT	NT	0.06	NT	NT	<0.02	0.4	NT	<0.2	NT	NT	NT	NT	NT	NT	15.4
letterkenny	Swilly	April	Letterkenny - Downstream	192502323	11-Apr-19	7.85	NT	NT	95.3	2	NT	NT	0.25	NT	NT	<0.02	0.6	NT	<0.2	NT	NT	NT	NT	NT	NT	23.81
Letterkenny	Swilly	May	Letterkenny - Upstream	192505433	06-May-19	7.9	12	NT	99.6	3	NT	NT	0.29	NT	NT	0.84	0.9	NT	<0.2	NT	NT	NT	NT	NT	NT	12.89
Letterkenny	Swilly	May	Letterkenny - Downstream	192505434	06-May-19	7.58	12.1	NT	99.4	<2	NT	NT	0.3	NT	NT	0.07	0.9	NT	<0.2	NT	NT	NT	NT	NT	NT	9.91
Letterkenny	Swilly	September	Letterkenny - Upstream	192505410	03-Sep-19	7.84	17.1	NT	93.6	<2	NT	NT	0.14	NT	NT	0.03	0.7	NT	<0.4	NT	NT	NT	NT	NT	NT	5.75
Letterkenny	Swilly	September	Letterkenny - Downstream	192505411	03-Sep-19	7.96	17.1	NT	93.7	2.1	NT	NT	0.15	NT	NT	0.03	0.8	NT	<0.5	NT	NT	NT	NT	NT	NT	6.15
Letterkenny	Swilly	November	Letterkenny - Upstream	192505428	19-Nov-19	7.93	17.1	NT	95.1	2.43	NT	NT	0.11	NT	NT	<0.02	0.6	NT	0.7	NT	NT	NT	NT	NT	NT	<4
Letterkenny	Swilly	November	Letterkenny - Downstream	192505429	19-Nov-19	7.93	17.1	NT	90.2	<2	NT	NT	0.14	NT	NT	0.99	0.7	NT	0.7	NT	NT	NT	NT	NT	NT	<4