Annual Environmental Report

2018

Lixnaw

D0462-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0462-01, Lixnaw, in Kerry 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 LIXNAW WWTP with a Plant Capacity PE of 300. The treatment process includes the following:

1.2.1 LIXNAW WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Preliminary Screening
Primary Treatment	Yes	Imhoff Tank
Secondary Treatment	No	
Nutrient Removal	No	
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 LIXNAW WWTP

Compliance Status	
Were all parameters compliant for LIXNAW 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
LIXNAW WWTP	Liquid Sludge	205	Volume (m3)	3	ENVA

Annual Statement of Measures

Lixnaw WWTP is on the IW Capital Investment Programme. Planning approval has been granted for the construction of an Integrated Constructed Wetland (ICW).

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 - LIXNAW WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr	6	664	328.17
BOD, 5 days with Inhibition (Carbonaceous BOD)	6	276	155.17
Suspended Solids	6	329	119.83
Hydraulic Capacity	0	248.71	248.71

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 greater than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is greater 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 - LIXNAW 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 exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Suspended Solids	0	0	50	6	4	N/A	78	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD)	0	0	20	6	2	N/A	121.33	Fail

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):

The Imhoff tank is biologically and hydraulically overloaded.

Significance of Results:

The WWTP is not compliant with the ELV's set in the Wastewater Discharge Licence. Note new ELVs will come in to operation 31/12/2019

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 - LIXNAW 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	88997, 129204	TPEFF1300D0462SW001	No	No	No	No	Unassigned
Downstream	88700, 132406	TPEFF1300D0462SW001	No	No	No	No	Unassigned

2.3.2 Ambient Monitoring Parameter Summary - LIXNAW 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
Dissolved Oxygen	RS23B030570	78.05	RS23B030700	61.88		
ortho-Phosphate (as P) - unspecified	RS23B030570	0.05	RS23B030700	0.07	0.08	29
Ammonia-Total (as N)	RS23B030570	0.13	RS23B030700	0.18	0.15	34.7
BOD - 5 days (Total)	RS23B030570	2.4	RS23B030700	2.33	2.6	-2.7
pH	RS23B030570	7.63	RS23B030700	7.84		
Conductivity 20 C	RS23B030570	453.75	RS23B030700	3184.5		

Significance of Results:

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

The parameters which exceeded the EQS and may be causing an effect are: Ammonia. Note however that Ammonia concentrations upstream are also elevated.

Any other know impacts: None

The EQS assessed relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009, as amended

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 - LIXNAW WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
TN				
COD	29790.69	22725.05	23.72	
TP				
cBOD	14085.9	11014.54	21.8	
SS	10878.37	7080.77	34.91	

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.

LIXNAW WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	202.5

DWF to the Treatment Plant (m3/day)	68
Current Hydraulic Loading - annual max (m3/day)	248.71
Average Hydraulic loading to the Treatment Plant (m3/day)	248.71
Organic Capacity (PE) - As Constructed	300
Organic Capacity (PE) - Collected Load (peak week)	817
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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)
Non-compliance	WWTP upgrade required to meet ELV	4	Yes	No

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	1
Number of Incidents reported to the EPA via EDEN in 2018	1
Explanation of any discrepancies between the two numbers above	

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)?[3]	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP?[2](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 (m3)	Monitoring Status
SW002	89089.18, 129272.2	Yes	Low	Meeting			Not Monitored
SW003 (INTERIM CODE)	89920, 129593	No	Low	Meeting			Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	
Is each SWO identified as non meeting DoEHLG Guidance included in the Programme of Improvements?	N/A
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?	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
Upgrade WWTP, as necessary, to comply with ELVs specified in Schedule A: Discharges & Discharge Monitoring, of this licence.	C	31/12/2019	No	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis. Planning approval has been granted for the construction of an Integrated Constructed Wetland (ICW).

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 (e.g. Appendix X).
There is no Licence Specific Report Required in this AER Annual Review.				

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	
Have these processes commenced?	No
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: 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

In the appendix include all the detailed or site specific reports that are relevant to the AER. Reports omitted from previous AERs should also be appended here.

Appendix
Appendix 7.1 - Ambient monitoring summary

								006_PH		007A_CONDUCTIVITY20C	013C_BOD		022K_AMMONIA		025_PHOSPHATE_SRP		035_DO_PCT_SAT		082_VIS_INSPECTION
								pH		Conductivity	B.O.D.		Ammonia		Phosphorus (MRP)		Dissolved Oxygen		Visual Inspection
									4.5			0		0		0		80.0	
									9.0			5		0.1		0.05		120.0	
Sampling Point	SP EPA Code	Sample No.	Sampled Date	Sampled Time	Sampled By	Comments	Sample Status	PH	PH	USCM	BOD	BOD	MGLN	MGLN	MGL	MGL	PERCENT_SA	PERCENT_SA	NONE
Brick us of Lixnaw wwtp_LIXNAW_US_DISCHARGE_PT	RS23B030570	2018/0081	10-Jan-18	11:40	EX_GC	High colour, DO - 8.70, Temp - 8.3 0C, % sat - 74.8%	Authorised	7.3		399	2.1		0.14		0.07		74.8		high colour
Brick us of Lixnaw wwtp_LIXNAW_US_DISCHARGE_PT	RS23B030570	2018/0671	07-Mar-18	13:00	EX_KL		Authorised	7.5		351	1.4		0.11		0.03		79.1		clear
Brick us of Lixnaw wwtp_LIXNAW_US_DISCHARGE_PT	RS23B030570	2018/1992	10-Jul-18	10:45	EX_GC	DO 6.94, Temp 20.7 0C, % Sat 76.3%	Authorised	8.0		829	4.2		0.18		0.02		76.3		not recorded
Brick us of Lixnaw wwtp_LIXNAW_US_DISCHARGE_PT	RS23B030570	2018/3435	14-Nov-18	9:30	EX_GC	High colour, 9.41 DO, 12.4 0C, 82.1% Sat	Authorised		7.7	236		1.9		0.09		0.07		82.0	high colour
Brick brg Near Sleveen (Ballinagare brg)_LIXNAW_DS_DISCHARGE_PT	RS23B030700	2018/0082	10-Jan-18	11:30	EX_GC	High colour, DO - 8.73, Temp - 7.7 0C, % sat - 73.5%	Authorised	7.3		411	1.8		0.16		0.08		73.5		high colour
Brick brg Near Sleveen (Ballinagare brg)_LIXNAW_DS_DISCHARGE_PT	RS23B030700	2018/0672	07-Mar-18	12:45	EX_KL		Authorised	7.5		924	1.4		0.13		0.03		75.5		clear
Brick brg Near Sleveen (Ballinagare brg)_LIXNAW_DS_DISCHARGE_PT	RS23B030700	2018/1991	10-Jul-18	11:00	EX_GC	DO 10.0, Temp 21.4 0C, % Sat 111.5%	Authorised	8.2		10980	4.3		0.29		0.07		111.5		not recorded
Brick brg Near Sleveen (Ballinagare brg)_LIXNAW_DS_DISCHARGE_PT	RS23B030700	2018/3436	14-Nov-18	9:20	EX_GC	High colour, DO 8.77, 12.2 0C, 88.6% sat	Authorised		7.4	423		2.3		0.30		0.12		88.6	high colour