

# Annual Environmental Report

2018



Portlaoise

D0001-01

## **TABLE OF CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER**

- 1.1 LICENCE SPECIFIC REPORTING INCLUDED IN AER
- 1.2 TREATMENT TYPE
  - 1.2.1 PORTLAOISE WWTP
- 1.3 ELV OVERVIEW
  - 1.3.1 PORTLAOISE WWTP
- 1.4 SLUDGE REMOVAL

### **2 MONITORING REPORTS SUMMARY**

- 2.1 SUMMARY REPORT ON MONTHLY INFLUENT MONITORING
  - 2.1.1 INFLUENT MONITORING SUMMARY - PORTLAOISE WWTP
- 2.2 DISCHARGES FROM THE AGGLOMERATION
  - 2.2.1 EFFLUENT MONITORING SUMMARY - PORTLAOISE WWTP
- 2.3 AMBIENT MONITORING SUMMARY
  - 2.3.1 AMBIENT MONITORING REPORT SUMMARY - PORTLAOISE WWTP
  - 2.3.2 AMBIENT MONITORING PARAMETER MEAN (MG/L) - PORTLAOISE WWTP

### **3 OPERATIONAL REPORTS SUMMARY**

- 3.1 TREATMENT EFFICIENCY REPORT
  - 3.1.1 TREATMENT EFFICIENCY REPORT SUMMARY - PORTLAOISE WWTP
- 3.2 TREATMENT CAPACITY REPORT SUMMARY
- 3.3 COMPLAINTS SUMMARY
- 3.4 REPORTED INCIDENTS SUMMARY
  - 3.4.1 SUMMARY OF INCIDENTS
  - 3.4.2 SUMMARY OF OVERALL INCIDENTS
- 3.5 SLUDGE / OTHER INPUTS TO THE WWTP

### **4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS**

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
  - 4.1.1 SWO IDENTIFICATION
  - 4.1.2 INSPECTION SUMMARY REPORT
- 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

4.2.3 SEWER INTEGRITY RISK ASSESSMENT SUMMARY

**5 LICENCE SPECIFIC REPORTS**

**6 CERTIFICATION AND SIGN OFF**

6.1 SUMMARY OF AER CONTENTS

6.2 DECLARATION BY IRISH WATER

**7 APPENDIX**

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0001-01, Portlaoise, in Laois 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
<b>There is no Licence Specific Reports included in the AER.</b>	

## 1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant PORTLAOISE WWTP with a Plant Capacity PE of 39,000. The treatment process includes the following:

### 1.2.1 PORTLAOISE WWTP

Treatment type	Yes / No	Details
<b>Preliminary Treatment</b>	Yes	Screening / Grit Removal
<b>Primary Treatment</b>	No	
<b>Secondary Treatment</b>	Yes	Conventional Activated Sludge
<b>Nutrient Removal</b>	Yes	Chemical Dosing
<b>Tertiary Treatment</b>	Yes	Filtration

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 PORTLAOISE WWTP

Compliance Status	
Were all parameters compliant for PORTLAOISE WWTP	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
PORTLAOISE WWTP	Cake Sludge	5249	Weight (Tonnes)	18.3	Portlaw, Waterford
PORTLAOISE WWTP	Dried Sludge	5	Weight (Tonnes)	92	Portlaw, Waterford

#### 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 - PORTLAOISE WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
<b>COD-Cr mg/l</b>	27	986	463.4
<b>Suspended Solids mg/l</b>	27	1424	312.43
<b>Total Nitrogen mg/l</b>	19	71	22.52
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	27	228.8	99.55
<b>Total Phosphorus (as P) mg/l</b>	19	9.9	3.56
<b>Hydraulic Capacity</b>	0	30900	10303

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 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 - PORTLAOISE WWTP

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included <sup>Note 1</sup>	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)
Nitrite (as NO <sub>2</sub> ) mg/l	0	0	0	10	0	0	0.03	N/A
Chloride mg/l	250	300	0	17	0	0	108.76	Pass
Nitrate (as N) mg/l	7.3	8.76	0	27	0	0	4.4	Pass
Suspended Solids mg/l	35	87.5	0	27	0	0	5.81	Pass
Enterococci (Intestinal) MPN/100ml	0	0	0	2	0	0	997.2	N/A
Nitrite (as N) mg/l	0	0	0	16	0	0	0.02	N/A
COD-Cr mg/l	125	250	0	27	0	0	20.49	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	5	10	0	27	0	0	0.48	Pass
Ammonia-Total (as N) mg/l	0	0	0	27	0	0	0.16	N/A

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included <sup>Note 1</sup>	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)
<b>Conductivity @25°C µS/cm</b>	0	0	0	22	0	0	772.51	N/A
<b>Coliform Bacteria (Total) MPN/100ml</b>	0	0	0	2	0	0	26057.28	N/A
<b>Total Phosphorus (as P) mg/l</b>	0	0	0	19	0	0	0.13	N/A
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	0.21	0.42	0	27	0	0	0.04	Pass
<b>E. Coli MPN/100ml</b>	0	0	0	2	0	0	4174.27	N/A
<b>pH pH units</b>	6 to 9	0	0	27	0	0	7.85	Pass
<b>Total Nitrogen mg/l</b>	0	0	0	19	0	0	3.54	N/A

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 - PORTLAOISE 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
<b>Upstream</b>	246849, 199036	TPEFF1600D0001SW001	No	No	No	No	Poor
<b>Downstream</b>	246373, 394747	TPEFF1600D0001SW001	No	No	No	No	Poor

### 2.3.2 Ambient Monitoring Parameter Summary - PORTLAOISE 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
<b>Dissolved Oxygen mg/l</b>	RS14T010170	10.8	RS14T010200			
<b>Nitrite (as N) µg/l</b>	RS14T010170	15.36	RS14T010200			
<b>Total Hardness (as CaCO<sub>3</sub>) mg/l</b>	RS14T010170	337.8	RS14T010200			
<b>Nitrate (as N) mg/l</b>	RS14T010170	3.24	RS14T010200			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
<b>Ammonia-Total (as N) mg/l</b>	RS14T010170	0.036	RS14T010200	0.086	0.14	35.3
<b>Temperature °C</b>	RS14T010170	12.44	RS14T010200	12.01		
<b>Alkalinity-total (as CaCO3) mg/l</b>	RS14T010170	281.2	RS14T010200			
<b>BOD - 5 days (Total) mg/l</b>	RS14T010170	1.38	RS14T010200	2.17	2.6	30.4
<b>pH pH units</b>	RS14T010170	8.22	RS14T010200	8.06		
<b>True Colour mg/litre Pt Co</b>	RS14T010170	32.2	RS14T010200			
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	RS14T010170	0.028	RS14T010200	0.034	0.075	7.1
<b>Chloride mg/l</b>	RS14T010170	61.34	RS14T010200	59.53		
<b>Total Oxidised Nitrogen (as N) mg/l</b>	RS14T010170	3.28	RS14T010200			
<b>Dissolved Oxygen % Saturation</b>	RS14T010170	102	RS14T010200	90.2		
<b>Conductivity @25°C µS/cm</b>	RS14T010170	788	RS14T010200	896		

### Significance of Results:

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

The ambient monitoring results meet the required EQS. Where the ambient monitoring results meet the EQS this 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 negative impact on the water quality.

The discharge from the WWTP has no observable negative impact on the Water Framework Directive status. The Water Framework Directive status is Poor u/s and d/s of the WWTP.

### 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 - PORTLAOISE WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TP	21861.88	796.84	96.36
COD	1869890.95	82692.7	95.58
SS	1260677.1	23454.89	98.14
TN	137315.05	21594.2	84.27
cBOD	401700.89	1925.68	99.52

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.

PORTLAOISE WWTP	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	23400

PORTLAOISE WWTP	
DWF to the Treatment Plant (m <sup>3</sup> /day)	7800
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	30900
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	10303
Organic Capacity (PE) - As Constructed	39000
Organic Capacity (PE) - Collected Load (peak week)	29005
Organic Capacity (PE) - Remaining	9995
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
6	Blocked Sewer	0	6

### 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)
Uncontrolled release	Other	1	No	Yes

### 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	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)
Landfill Leachate (delivered by sewer network)	323.26	Weight (Tonnes)	3.93	0.01	Yes	Yes	Yes

## 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 <sup>3</sup> )	Monitoring Status
SW006	246600, 199608	Yes	Medium	Not Meeting			Not Monitored

#### 4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m <sup>3</sup> )?	Not Monitored
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)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Discharge to cease: SW3 from old storm water tank at the treatment works	A	28/07/2009	No	Works Completed		
Discharge to cease: SW4 from the inlet works of the plant	A	28/07/2009	No	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	Improvement Source	Expected Completion Date	Comments
<b>D0001-IP:46</b>	A Drainage Area Plan is underway and is proposed to be completed in 2020. 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.	Other	12/31/2020	



### 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	2014	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?	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?	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	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

There are no Appendices included.