

# Annual Environmental Report

2019



Portlaw

D0274-01

## **CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER**

- 1.1 ANNUAL STATEMENT OF MEASURES
- 1.2 TREATMENT SUMMARY
- 1.3 ELV OVERVIEW
- 1.4 LICENSE SPECIFIC REPORT INCLUDED IN AER

### **2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY**

- 2.1 PORTLAW WWTP - TREATED DISCHARGE
  - 2.1.1 INFLUENT SUMMARY - PORTLAW WWTP
  - 2.1.2 EFFLUENT MONITORING SUMMARY - PORTLAW WWTP -
  - 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE -
  - 2.1.4 OPERATIONAL REPORTS SUMMARY FOR PORTLAW WWTP
  - 2.1.5 SLUDGE/OTHER INPUTS TO PORTLAW WWTP
- 2.2 PORTLAW SEPTIC TANK - TREATED DISCHARGE
  - 2.2.1 INFLUENT SUMMARY - PORTLAW SEPTIC TANK
  - 2.2.2 EFFLUENT MONITORING SUMMARY - PORTLAW SEPTIC TANK -
  - 2.2.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE -
  - 2.2.4 OPERATIONAL REPORTS SUMMARY FOR PORTLAW SEPTIC TANK
  - 2.2.5 SLUDGE/OTHER INPUTS TO PORTLAW SEPTIC TANK

### **3 COMPLAINTS AND INCIDENTS**

- 3.1 COMPLAINTS SUMMARY
- 3.2 REPORTED INCIDENTS SUMMARY
  - 3.2.1 SUMMARY OF INCIDENTS
  - 3.2.2 SUMMARY OF OVERALL INCIDENTS

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

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
  - 4.1.1 SWO IDENTIFICATION AND 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

**5 LICENCE SPECIFIC REPORTS**

5.1 PRIORITY SUBSTANCES ASSESSMENT

**6 CERTIFICATION AND SIGN OFF**

6.1 SUMMARY OF AER 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 D0274-01, Portlaw, in Waterford 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

The 1600 PE Secondary WWTP was upgraded to 2,500 PE 3P WWTP in 2019 and the 100 PE septic tank has been decommissioned (Q4 2019)

## 1.2 TREATMENT SUMMARY

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

- Portlaw WWTP with a Plant Capacity PE of 2500, the treatment type is 3P - Tertiary P removal
- Portlaw Septic Tank with a Plant Capacity PE of 100, the treatment type is 1 - Primary treatment (note SW002 was decommissioned in Q4 2019)

## 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
TPEFF3100D0274SW001	Portlaw WWTP	Treated	Non-Compliant	ortho-Phosphate (as P) - unspecified mg/l Suspended Solids mg/l
TPEFF3100D0274SW002	Portlaw Septic Tank	Treated	No monitoring carried out due to H&S of access	No Sampling Carried Out

## 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 PORTLAW WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - PORTLAW 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
Total Nitrogen mg/l	12	130.4	37.24
Total Phosphorus (as P) mg/l	12	60	7.82
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	470	169.93
Suspended Solids mg/l	12	525.6	181.55
COD-Cr mg/l	12	1092	431.09
Hydraulic Capacity	N/A	2486	789

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 greater than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is greater than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional 'Operational Performance Summary'. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

## 2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF3100D0274SW001

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)
<b>COD-Cr mg/l</b>	125	250	N/A	12	N/A	N/A	40.53	Pass
<b>Suspended Solids mg/l</b>	35	87.5	N/A	12	3	N/A	23.32	Fail
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	25	50	N/A	12	N/A	N/A	6.99	Pass
<b>pH pH units</b>	9	9	N/A	12	N/A	N/A	6.9	Pass
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	3	3.6	N/A	12	1	1	1.07	Fail
<b>Ammonia-Total (as N) mg/l</b>	N/A	N/A	N/A	1	N/A	N/A	0.01	
<b>Total Nitrogen mg/l</b>	N/A	N/A	N/A	12	N/A	N/A	16.03	
<b>Total Phosphorus (as P) mg/l</b>	N/A	N/A	N/A	12	N/A	N/A	1.45	

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):

These ELV exceedances relate to the commissioning of the new sections of Plant as part of the WWTP upgrade works.

### 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 TPEFF3100D0274SW001

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
Upstream Monitoring	246872, 114969	RSC16C030700	No	No	No	No	Poor
Downstream Monitoring	247936, 115024	RSC16C030800	No	No	No	No	Poor

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

The ambient monitoring results 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.

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

## 2.1.4 OPERATIONAL PERFORMANCE SUMMARY - PORTLAW WWTP

### 2.1.4.1 Treatment Efficiency Report - Portlaw 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)
<b>COD</b>	122929	11662	91
<b>cBOD</b>	48457	2012	96
<b>TP</b>	2229	418	81
<b>SS</b>	51771	6709	87
<b>TN</b>	10620	4611	57

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

### 2.1.4.2 Treatment Capacity Report Summary - Portlaw 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.

Portlaw WWTP	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	360
DWF to the Treatment Plant (m <sup>3</sup> /day)	360
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	2486
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	789
Organic Capacity (PE) - As Constructed	2500
Organic Capacity (PE) - Collected Load (peak week) <sup>Note1</sup>	1796
Organic Capacity (PE) - Remaining	704
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 - PORTLAW 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.							

## 2.2 PORTLAW SEPTIC TANK - TREATED DISCHARGE

### 2.2.1 INFLUENT & EFFLUENT DATA

No sampling is carried out for the septic tank as safe access cannot be gained.

SW002 was decommissioned in Q4 2019

### 2.2.2 OPERATIONAL PERFORMANCE SUMMARY - PORTLAW SEPTIC TANK

#### 2.2.2.1 Treatment Efficiency Report - Portlaw Septic Tank

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)
<b>There is no Treatment Efficiency data included in the AER as there is no monitoring data available. SW002 was decommissioned in Q4 2019</b>			

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

#### 2.2.2.2 Treatment Capacity Report Summary - Portlaw Septic Tank

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.

Portlaw Septic Tank	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	22
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	22

Portlaw Septic Tank	
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	Unknown – no monitoring carried out
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	Unknown – no monitoring carried out
Organic Capacity (PE) - As Constructed	100
Organic Capacity (PE) - Collected Load (peak week) <sup>Note1</sup>	267
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	SW002 was decommissioned in Q4 2019

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.

### 2.2.3 SLUDGE / OTHER INPUTS - PORTLAW SEPTIC TANK

'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)
<b>There is no Sludge and Other Input data for the Treatment Plant included in the AER.</b>							

## 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
11	Blocked Sewer	0	11

### 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)
Uncontrolled release	EO caused by power failure	1	No	No
Breach of ELV	Plant or equipment maintenance at WWTP	1	No	No
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	3
Number of Incidents reported to the EPA via EDEN in 2019	3
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
SW003	247387, 115035	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	258217, 101100	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	258620, 101462	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not 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 / changes to Schedule C3 and A4 under Condition 1.7?	No
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## 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
<b>D0274-SIP:01</b>	Discontinue Secondary Discharge Point (SW002) or achieve ELVs as specified in Schedule A.2.: Secondary Waste Water Discharge(s) & Monitoring, of this licence.	C	31/12/2019	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 / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
D274-IP:59	The 1600 PE Secondary WWTP was upgraded to 2,500 PE 3P WWTP in 2019 and the 100 PE septic tank has been decommissioned (Q4 2019)		Complete	

## 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	2015	No	

### 5.1 PRIORITY SUBSTANCES ASSESSMENT

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

## 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	N/A
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: 15/04/2020

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**



SW1 u/s EPA		RSC16C030700				
Date	pH	DO	BOD	Temp	Ortho phosphate (as P)	Ammonia
12/03/2019	7.3	125.6	1.3	7.6	0.042	0.061
14/05/2019	7.5	130.6	0	11	0.013	0
09/07/2019	7.9	111.3	1	16.4	0.033	0
19/11/2019	7.4	120.3	1	8.9	0.03	0.097
<b>Annual Average</b>	<b>7.53</b>	<b>121.95</b>	<b>0.83</b>	<b>10.98</b>	<b>0.03</b>	<b>0.04</b>
<b>Units</b>	<b>Scale</b>	<b>%</b>	<b>Mg/l</b>		<b>Mg/l</b>	<b>Mg/l</b>
<b>EQS (Coastal Water Body)</b>	6.0 < pH < 9.0	120% > 95%ile > 80%	High Status ≤1.3	-	Not specified	High Status ≤0.040
			Good Status ≤1.5			Good Status ≤0.065
SW1 d/s EPA		RSC16C030800				
Date	pH	DO	BOD	Temp	Ortho phosphate (as P)	Ammonia
12/03/2019	7.3	122.4	1.6	7.9	0.04	0.071
14/05/2019	7.6	142.5	0	12	0.015	0.026
09/07/2019	8.3	94	1.9	18.8	0.013	0.026
19/11/2019	7.4	116	0	8.8	0.035	0.083
<b>Annual Average</b>	<b>7.65</b>	<b>118.73</b>	<b>0.88</b>	<b>11.88</b>	<b>0.03</b>	<b>0.05</b>
<b>Units</b>	<b>Scale</b>	<b>%</b>	<b>Mg/l</b>		<b>Mg/l</b>	<b>Mg/l</b>
<b>EQS (Coastal Water Body)</b>	6.0 < pH < 9.0	120% > 95%ile > 80%	High Status ≤1.3	-	Not specified	High Status ≤0.040
			Good Status ≤1.5			Good Status ≤0.065

Figure 2 – Portlaw WWTP Ambient Monitoring – Comparison of Upstream and Downstream Results

Given the above results, there is no indication that the effluent discharge from the Portlaw WWTP is currently causing a discernible impacting on water quality.