Annual Environmental Report

2018

Portlaw

D0274-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 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 TREATMENT SUMMARY

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

- Portlaw WWTP with a Plant Capacity PE of 1600

The treatment process includes the following:

1.1.1 PORTLAW WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	No	
Primary Treatment	No	
Secondary Treatment	Yes	Conventional Activated Sludge
Nutrient Removal	No	
Tertiary Treatment	No	

1.1.2 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	Suspended Solids - based on number of allowable samples exceeding ELV

1.2 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
There is no Licence Specific Reports included in the AER.	

2 TREATMENT PLANT PERFORMAND 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
Suspended Solids mg/l	12	412	157
Total Nitrogen mg/l	11	156	52
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	355	224
Total Phosphorus (as P) mg/l	11	14.6	5.5
COD-Cr mg/l	12	1034	511
Hydraulic Capacity	N/A	360	360

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’.

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)
Suspended Solids mg/l	35	87.50	N/A	12	3	0	33.9	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	1	0	12.8	Pass
COD-Cr mg/l	125	250	N/A	12	0	0	45.8	Pass
ortho-Phosphate (as P) - unspecified mg/l	3	3.6	N/A	12	0	0	0.92	Pass
pH	6-9	6-9	N/A	12	0	0	N/A	Pass

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):

Insufficient plant capacity

Significance of Results:

The WWTP is not compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Downstream	247936, 115024	TPEFF3100D0274SW002	No	No	Yes	No	Poor

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

Significance of Results:

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

The ambient monitoring results did meet the required EQS.

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

2.1.4.1 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:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
cBOD	29373.87	1588.75	94.59	
TP	724.13	214.12	70.43	
TN	6908.06	2596.43	62.41	
SS	18680.3	4271.69	77.13	
COD	65126.62	5805.49	91.09	

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

2.1.4.2 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.

Portlaw WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	360
DWF to the Treatment Plant (m3/day)	360
Current Hydraulic Loading - annual max (m3/day)	360
Average Hydraulic loading to the Treatment Plant (m3/day)	360
Organic Capacity (PE) - As Constructed	1600
Organic Capacity (PE) - Collected Load (peak week)	2037
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

2.1.5 SLUDGE / OTHER INPUTS

'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.							

2.1.6 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
Portlaw WWTP	Liquid Sludge	1637.2	Weight (Tonnes)	1.85	Dungarvan WWTP

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
1	Blocked Sewer	0	1

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)
Non-compliance	WWTP upgrade required to meet ELV	1	No	No

3.2.2 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	

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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
SW003	247378, 115035	Yes	Low	Not Meeting	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?	No
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
D0274-SIP:01	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	Work ongoing on-site	30/06/2019	WWTP upgrade works commenced in 2018, these works are scheduled to be complete in June 2019. Additionally works commenced on diverting the flows from SW002 to the main town sewer system.

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
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	WWTP Upgrade and diversion of SW002
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: 08/05/2019

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

Appendix 7.2 - Ambient Monitoring Summary

The Clodiagh River, into which Portlaw WWTP discharges, is assigned Moderate Status in accordance with 2010 to 2012 monitoring data in support of the Water Framework Directive.

The WWDL requires quarterly Ambient Monitoring of the Receiving Waters at:

- RSC16C030700
- RSC16C030800

These two locations form part of the EPA River Monitoring locations and therefore the EPA data has been used in this assessment.

Portlaw Ambient Monitoring

SW1u EPA **RSC16C030700**

SAMPLE_NO	LOCATION_CODE	DATE_COLLECTED	pH	Dissolved Oxygen	BOD	Ortho-Phosphate	Ammonia	Salinity [Estimated]	Conductivity	Temp @ Testing [Assumed]	Sample Temp	Visual
				% sat	mg/l	mg/l	mg/l	PSU	µS/cm	°C	°C	
18-02356	RSC16C030800	20-Feb-18	8	106	*0.5*	0.022	*0.01*	0.093	190	25	7.5	Clear
18-05387	RSC16C030800	24-Apr-18	7.9	90	*0.5*	0.014	*0.01*	0.091	185	25	10	Clear
18-07460	RSC16C030800	26-Jun-18	8	115	*0.5*	0.03	*0.01*	0.099	203	25	16.7	Clear
18-16561	RSC16C030800	31-Oct-18	7.7	112	1	0.01	*0.01*	0.082	168	25	6.8	Clear
		Average	7.9	105.8	0.6	0.0	0.0	0.1				

http://www.chemiasoft.com/chemd/salinity_calculator

SW1d EPA **RSC16C030800**

SAMPLE_NO	LOCATION_CODE	DATE_COLLECTED	pH	Dissolved Oxygen	BOD	Ortho-Phosphate	Ammonia	Salinity [Estimated]	Conductivity	Temp @ Testing	Sample Temp	Visual
				% sat	mg/l	mg/l	mg/l	PSU	µS/cm	°C	°C	
18-02355	RSC16C030700	20-Feb-18	7.9	104	*0.5*	0.043	0.035	0.094	192	25	7.7	Clear
18-05386	RSC16C030700	24-Apr-18	8.2	85	*0.5*	0.021	0.033	0.094	191	25	10.1	Clear
18-08459	RSC16C030700	26-Jun-18	7.9	113	1.1	0.046	0.073	0.230	469	25	18.5	Clear
18-16560	RSC16C030700	31-Oct-18	8.5	95	1.1	0.029	0.033	0.424	867	25	7.4	Clear
		Average	32.5	397	3.2	0.139	0.210	0.210				

Figure 7.2.1 *– Portlaw WWTP Ambient Monitoring Results 2018*

Salinity was not measured as part of the EPA monitoring, therefore it has been estimated using Conductivity and Temperature.

SW1 u/s EPA		RSC16C030700				
Date	**pH**	**DO**	**BOD**	**Temp**	**Ortho phosphate (as P)**	**Ammonia**
20/02/2018	8	106	0.5	7.5	0.022	0.01
24/04/2018	7.9	90	0.5	10	0.014	0.01
26/06/2018	8	115	0.5	16.7	0.03	0.01
31/10/2018	7.7	112	1	6.8	0.01	0.01
Annual Average	**7.90**	**105.75**	**0.63**	**10.25**	**0.02**	**0.01**
Units	**Scale**	**%**	**Mg/l**		**Mg/l**	**Mg/l**
EQS (Coastal Water Body)	6.0 < pH <9.0	120% > 95%ile > 80%	High Status ≤1.3	-		High Status ≤0.040
			Good Status ≤1.5		*Not specified*	Good Status ≤0.065

SW1 d/s EPA		RSC16C030800				
Date	**pH**	**DO**	**BOD**	**Temp**	**Ortho phosphate (as P)**	**Ammonia**
20/02/2018	7.9	104	0.5	7.7	0.043	0.035
24/04/2018	8.2	85	0.5	10.1	0.021	0.033
26/06/2018	7.9	113	1.1	18.5	0.046	0.073
31/10/2018	8.5	95	1.1	7.4	0.029	0.033
Annual Average	**8.13**	**99.25**	**0.80**	**10.93**	**0.03**	**0.04**
Units	**Scale**	**%**	**Mg/l**		**Mg/l**	**Mg/l**
EQS (Coastal Water Body)	6.0 < pH <9.0	120% > 95%ile > 80%	High Status ≤1.3	-		High Status ≤0.040
			Good Status ≤1.5		*Not specified*	Good Status ≤0.065

Figure 7.2.2 *– 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.