Annual Environmental Report

2020

Enniscorthy

D0029-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0029-01, Enniscorthy, in Wexford 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.

There were no significant changes or operational improvements in 2020. Enniscorthy DAP stage 2 was complete in Q4 2020, and progressed to Stage 3.

1.2 TREATMENT SUMMARY

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

- Enniscorthy WWTP - 2020 with a Plant Capacity PE of 26200, the treatment type is 2 - Secondary treatment
- KILLAGOLEY WWTP (Secondary treatment) - decommissioned in 2018 as part of the upgrade works

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
TPEFF3300D0029SW001	Enniscorthy WWTP - 2020	Treated	Compliant	N/A

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF3300D0029SW002	KILLAGOLEY WWTP - 2020	Decommissioned	N/A	N/A

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 ENNISCORTHY WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - ENNISCORTHY WWTP - 2020

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	228	103.23
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	453	120.67
COD-Cr mg/l	12	778	279.14
Total Phosphorus (as P) mg/l	12	8.11	3.77
Total Nitrogen mg/l	12	45.7	22.49
Hydraulic Capacity	N/A	22625	5901.9

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’. The design of the wastewater tretament 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 - TPEFF3300D0029SW001

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	N/A	N/A	18.12	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	5.27	Pass
Temperature °C	25	25	N/A	12	N/A	N/A	7.31	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	N/A	N/A	1.94	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.43	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	N/A	N/A	0.05	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	12	N/A	N/A	0.44	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	N/A	N/A	0.31	Pass
Fats, Oils & Greases mg/l	N/A	N/A	N/A	4	N/A	N/A	10	

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)
Visual Inspection Descriptive	N/A	N/A	N/A	12	N/A	N/A	N/A	
Total Nitrogen mg/l	N/A	N/A	N/A	9	N/A	N/A	2.11	

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.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF3300D0029SW001

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	297536, 39759	RS12S022350	No	No	No	No	Good
Downstream	297803, 134564	RS12S022500	No	No	No	No	Good

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
BOD - 5 days (Total) mg/l	RS12S022350	1.72	RS12S022500	1.65	1.5	-4.4
Ammonia-Total (as N) mg/l	RS12S022350	0.03	RS12S022500	0.03	0.07	3.7
ortho-Phosphate (as P) - unspecified mg/l	RS12S022350	0.03	RS12S022500	0.06	0.04	67.8
Calcium - unspecified mg/l	RS12S022350	25.75	RS12S022500			
Chromium - unspecified µg/l	RS12S022350	1.01	RS12S022500			
Cobalt - unspecified µg/l	RS12S022350	1.04	RS12S022500			
Dissolved Organic Carbon mg/l	RS12S022350	5.49	RS12S022500			
Cadmium - unspecified µg/l	RS12S022350	0.08	RS12S022500			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Beryllium - unspecified µg/l	RS12S022350	1	RS12S022500			
Iron - unspecified µg/l	RS12S022350	287.25	RS12S022500			
Dissolved Oxygen % Saturation	RS12S022350	97.63	RS12S022500	97		
Boron - unspecified µg/l	RS12S022350	15.38	RS12S022500			
Molybdenum - unspecified µg/l	RS12S022350	1	RS12S022500			
Mercury - unspecified µg/l	RS12S022350	0.02	RS12S022500			
pH pH units	RS12S022350	7.73	RS12S022500	7.58		
Manganese - unspecified µg/l	RS12S022350	47.85	RS12S022500			
Potassium - unspecified mg/l	RS12S022350	2.14	RS12S022500			
Sodium - unspecified mg/l	RS12S022350	9.16	RS12S022500			
Nitrate (as N) mg/l	RS12S022350	3.95	RS12S022500	4.23		
Thallium - unspecified µg/l	RS12S022350	0.2	RS12S022500			
Total Nitrogen mg/l	RS12S022350	4.31	RS12S022500	4.43		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Nickel - unspecified µg/l	RS12S022350	1.26	RS12S022500			
Nitrite (as N) µg/l	RS12S022350	12.77	RS12S022500	10.56		
Zinc - unspecified µg/l	RS12S022350	8.65	RS12S022500			
Total Hardness (as CaCO3) mg/l	RS12S022350	97	RS12S022500	100.5		
Uranium - unfiltered µg/l	RS12S022350	2.86	RS12S022500			
Total Phosphorus (as P) mg/l	RS12S022350	0.07	RS12S022500			
Vanadium - unspecified µg/l	RS12S022350	1.26	RS12S022500			
Dissolved Oxygen mg/l	RS12S022350	10.49	RS12S022500	10.38		
Arsenic - unspecified µg/l	RS12S022350	1.63	RS12S022500			
Aluminium - unspecified µg/l	RS12S022350	141.75	RS12S022500			
Copper - unspecified µg/l	RS12S022350	1.68	RS12S022500			
Conductivity @25°C µS/cm	RS12S022350	244.38	RS12S022500	286.75		
Antimony - unspecified µg/l	RS12S022350	1	RS12S022500			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Alkalinity-total (as CaCO3) mg/l	RS12S022350	71.38	RS12S022500	69.5		
Chloride mg/l	RS12S022350	16.85	RS12S022500	28.08		
Barium - unspecified µg/l	RS12S022350	13.13	RS12S022500			
Lead - unspecified µg/l	RS12S022350	1.3	RS12S022500			
Suspended Solids mg/l	RS12S022350	14.5	RS12S022500			
Total Oxidised Nitrogen (as N) mg/l	RS12S022350	3.95	RS12S022500	4.25		
Temperature °C	RS12S022350	12.11	RS12S022500	12.68		
Strontium - unfiltered µg/l	RS12S022350	66.25	RS12S022500			
Selenium - unspecified µg/l	RS12S022350	1	RS12S022500			
Magnesium - unspecified mg/l	RS12S022350	5.45	RS12S022500			
True Colour mg/litre Pt Co	RS12S022350	44.25	RS12S022500	30.75		

Significance of Results:

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

The ambient monitoring results does not meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a deterioration in Orthophosphate and ammonia , concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are: Downstream monitoring location in a tidal influence area , local activities (Agricultural and onsite private and domestic Wwtp) adversely impact downstream 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 - ENNISCORTHY WWTP - 2020

2.1.4.1 Treatment Efficiency Report - Enniscorthy WWTP - 2020

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)
cBOD	199234	2751	99
TP	6224	619	90
SS	170444	7479	96
TN	37138	2854	92
COD	460890	25737	94

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

2.1.4.2 Treatment Capacity Report Summary - Enniscorthy WWTP - 2020

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.

Enniscorthy WWTP - 2020	
Peak Hydraulic Capacity (m^3/day) - As Constructed	43080
DWF to the Treatment Plant (m^3/day)	5336
Current Hydraulic Loading - annual max (m^3/day)	22625
Average Hydraulic loading to the Treatment Plant (m^3/day)	5901.9
Organic Capacity (PE) - As Constructed	26200
Organic Capacity (PE) - Collected Load (peak week)[Note1]	13749
Organic Capacity (PE) - Remaining	12451
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 - ENNISCORTHY WWTP - 2020

'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 KILLAGOLEY WWTP - 2020 - TREATED DISCHARGE

Killagoley WWTP was decommissioned in 2018

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 2020.			

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 pump failure	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	1
Number of Incidents reported to the EPA via EDEN in 2020	1
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 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW003	297194, 138827	Yes	Medium	Meeting	5	193	Monitored
SW004	297388, 139287	Yes	Medium	Meeting	18	883	Monitored
SW005	297563, 139743	Yes	Medium	Meeting	12	24	Monitored
SW007	297191, 140293	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW008	295392, 141322	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW009	295890, 140173	Yes	Medium	Meeting	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 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW001	297270, 138414	No	Medium	Meeting	Unknown	23153	Monitored
TBC	297217, 140122	No	Medium	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?	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

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
D0029-SIP:01	Decommissioning of secondary WWTP	C	30/06/2015	Yes	Works Completed		
D0029-SIP:02	Discharges from SW10 (Slaney Street discharge) to be discontinued	A	30/06/2015	Yes	At Planning Stage	31/12/2023	
D0029-SIP:03	Discharges from SW2 (Kilagoley secondary treatment plant), to be discontinued	A	30/06/2015	Yes	Works Completed		
D0029-SIP:04	Discharges from SW6 (Templeshannon) to be discontinued	A	30/06/2015	Yes	Works Completed		
D0029-SIP:05	Discharges from the pumping station at SW3 (St John's), shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Works Completed		
D0029-SIP:06	Discharges from the pumping station at SW4 (Promenade) shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Works Completed		
D0029-SIP:07	Discharges from the pumping station at SW5 (Spring Valley), shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Works Completed		

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
D0029-SIP:08	Discharges from the pumping station at SW7 (Island St), shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Works Completed		
D0029-SIP:09	Discharges from the pumping station at SW8 (Milehouse) shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Works Completed		
D0029-SIP:10	Discharges from the pumping station at SW9 (Carrigbruce) shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Works Completed		
D0029-SIP:11	Elimination of groundwater infiltration programme	C	30/06/2015	Yes	At Planning Stage	31/12/2023	
D0029-SIP:12	Installation of storm water holding tanks at WWTP	C	30/06/2015	Yes	Works Completed		
D0029-SIP:13	Upgrade of network to connect all areas of agglomeration to the works and to convey all waste water for treatment to the St. John's WWTP	C	30/06/2015	Yes	At Planning Stage	31/12/2023	
D0029-SIP:14	Upgrade of WWTP	C	30/06/2015	Yes	Works Completed		

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
D0029-SIP:15	Upgrade of WWWs to connect all areas of agglomeration to the works and to convey all waste water for treatment to St. John's WWTP	C	30/06/2015	Yes	At Planning Stage	31/12/2023	

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
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	additional SWO identified
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?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed: Date: 07/07/2021

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

There are no Appendices included