Annual Environmental Report

2021

Enniscorthy

D0029-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 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 capital works nor operational improvements in 2021

1.2 TREATMENT SUMMARY

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

- Enniscorthy WWTP with a Plant Capacity PE of 26200, the treatment type is 3P - Tertiary P removal

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	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
There are no Licence Specific Reports included in this AER.

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 ENNISCORTHY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - ENNISCORTHY 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	303	103
COD-Cr mg/l	12	340	190
Total Nitrogen mg/l	12	54	28
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	174	91
Total Phosphorus (as P) mg/l	12	4.54	2.30
Hydraulic Capacity	N/A	37645	5962

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 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 - 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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	22	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	4.05	Pass
Temperature °C	25	25	N/A	12	N/A	N/A	7.86	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	N/A	N/A	1.41	Pass
pH units	9.00	9.00	N/A	12	N/A	N/A	7.44	Pass
Ammonia-Total (as N) mg/l	5.00	6.00	N/A	12	N/A	N/A	0.281	Pass
Total Phosphorus (as P) mg/l	2.00	2.40	N/A	12	N/A	N/A	0.312	Pass
ortho-Phosphate (as P) - unspecified mg/l	1.00	1.20	N/A	12	N/A	N/A	0.231	Pass
Fats, Oils & Greases mg/l	N/A	N/A	N/A	4	N/A	N/A	7.07	

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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	3.61	
Visual Inspection Descriptive	N/A	N/A	N/A	12	N/A	N/A	N/A	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

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 Ecological Status
Upstream	297536, 139759	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	1.48	RS12S022500	1.75	1.50	18
Ammonia-Total (as N) mg/l	RS12S022350	0.033	RS12S022500	0.044	0.065	15.8
ortho-Phosphate (as P) - unspecified mg/l	RS12S022350	0.027	RS12S022500	0.029	0.035	5.4
Boron - unspecified µg/l	RS12S022350	16	RS12S022500	N/A	N/A	
Beryllium - unspecified µg/l	RS12S022350	0.707	RS12S022500	N/A	N/A	
Chloride mg/l	RS12S022350	17	RS12S022500	16	N/A	
Faecal coliforms no./100mls	RS12S022350	864	RS12S022500	655	N/A	
Dissolved Oxygen mg/l	RS12S022350	10	RS12S022500	10	N/A	

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Barium - unspecified µg/l	RS12S022350	14	RS12S022500	N/A	N/A	
Cadmium - unspecified µg/l	RS12S022350	0.038	RS12S022500	N/A	N/A	
Alkalinity-total (as CaCO3) mg/l	RS12S022350	73	RS12S022500	57	N/A	
Total Nitrogen mg/l	RS12S022350	4.36	RS12S022500	4.61	N/A	
Potassium - unspecified mg/l	RS12S022350	2.06	RS12S022500	N/A	N/A	
Selenium - unspecified µg/l	RS12S022350	0.707	RS12S022500	N/A	N/A	
Thallium - unspecified µg/l	RS12S022350	0.141	RS12S022500	N/A	N/A	
Sodium - unspecified mg/l	RS12S022350	9.24	RS12S022500	N/A	N/A	
pH units	RS12S022350	7.84	RS12S022500	7.76	N/A	
Nitrate (as N) mg/l	RS12S022350	3.98	RS12S022500	3.48	N/A	
Suspended Solids mg/l	RS12S022350	11	RS12S022500	N/A	N/A	
Magnesium - unspecified mg/l	RS12S022350	5.43	RS12S022500	N/A	N/A	

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Total Phosphorus (as P) mg/l	RS12S022350	0.052	RS12S022500	N/A	N/A	
Vanadium - unspecified µg/l	RS12S022350	0.790	RS12S022500	N/A	N/A	
Dissolved Organic Carbon mg/l	RS12S022350	5.12	RS12S022500	N/A	N/A	
Calcium - unspecified mg/l	RS12S022350	27	RS12S022500	N/A	N/A	
Conductivity @25°C µS/cm	RS12S022350	250	RS12S022500	211	N/A	
Aluminium - unspecified µg/l	RS12S022350	148	RS12S022500	N/A	N/A	
Dissolved Oxygen % Saturation	RS12S022350	98	RS12S022500	94	N/A	
Chromium - unspecified µg/l	RS12S022350	0.707	RS12S022500	N/A	N/A	
Antimony - unspecified µg/l	RS12S022350	0.707	RS12S022500	N/A	N/A	
Copper - unspecified µg/l	RS12S022350	1.68	RS12S022500	N/A	N/A	
Cobalt - unspecified µg/l	RS12S022350	0.707	RS12S022500	N/A	N/A	

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Arsenic - unspecified µg/l	RS12S022350	1.20	RS12S022500	N/A	N/A	
Nickel - unspecified µg/l	RS12S022350	0.962	RS12S022500	N/A	N/A	
Temperature °C	RS12S022350	12	RS12S022500	11	N/A	
Manganese - unspecified µg/l	RS12S022350	24	RS12S022500	N/A	N/A	
Strontium - unfiltered µg/l	RS12S022350	69	RS12S022500	N/A	N/A	
Total Hardness (as CaCO3) mg/l	RS12S022350	98	RS12S022500	78	N/A	
Nitrite (as N) µg/l	RS12S022350	9.65	RS12S022500	10	N/A	
Lead - unspecified µg/l	RS12S022350	0.402	RS12S022500	N/A	N/A	
Molybdenum - unspecified µg/l	RS12S022350	0.707	RS12S022500	N/A	N/A	
Mercury - unspecified µg/l	RS12S022350	0.016	RS12S022500	N/A	N/A	
Iron - unspecified µg/l	RS12S022350	178	RS12S022500	N/A	N/A	
Uranium - unfiltered µg/l	RS12S022350	2.72	RS12S022500	N/A	N/A	
Zinc - unspecified µg/l	RS12S022350	15	RS12S022500	N/A	N/A	

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Total Oxidised Nitrogen (as N) mg/l	RS12S022350	3.99	RS12S022500	3.50	N/A	
True Colour mg/litre Pt Co	RS12S022350	38	RS12S022500	58	N/A	

Significance of Results:

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

The ambient monitoring results do not meet the required EQS at the downstream monitoring location. 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 cBOD, Total Nitrogen, 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: Online private WWTP and agricultural activities

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

2.1.4.1 Treatment Efficiency Report - Enniscorthy 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)
SS	175162	6614	96
COD	321544	35781	89
TP	3901	509	87
TN	47053	5892	87
cBOD	154670	2307	99

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

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	
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)	37645
Average Hydraulic loading to the Treatment Plant (m^3/day)	5962
Organic Capacity (PE) - As Constructed	26200
Organic Capacity (PE) - Collected Load (peak week)[Note1]	14018
Organic Capacity (PE) - Remaining	12182
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

'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)
Waterworks Sludge	9125	Volume (m3)	0.1	0.1	Yes	Yes	No
Domestic /Septic Tank Sludge	86	Volume (m3)		0.01	No	Yes	Yes

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2021.			

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)
Abatement Equipment offline	EO caused by pump failure	1	No	No
Spillage	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	3
Number of Incidents reported to the EPA via EDEN in 2021	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 (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
SW001	297270, 138414	Yes	Medium	Meeting	Unknown	117424	Monitored
SW003	297193, 138827	Yes	Medium	Meeting	Unknown	600	Monitored
SW004	297388, 139286	Yes	Medium	Meeting	Unknown	45686	Monitored
SW005	297563, 139742	Yes	Medium	Meeting	Unknown	3715	Monitored
SW007	297193, 140291	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW008	295394, 141322	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
SW009	295891, 140175	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	167425
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 a 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	2028	
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	2028	
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	2028	
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	2028	

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

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 Tables 4.2.1 and 4.2.2.

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 a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Licence Specific Report	Required by licence	Year included in AER	Included in this 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
Has a Technical amendment/licence review application been submitted to the Agency by IW?	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	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: 28/04/2022

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