Annual Environmental Report

2022

Millstreet and Environs

D0332-02

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 AER

This Annual Environmental Report has been prepared for D0332-02, Millstreet and Environs, in Cork 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 was no major capital or operational changes undertaken

1.2 TREATMENT SUMMARY

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

- Millstreet WWTP with a Plant Capacity PE of 3220, 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
TPEFF3900D0332SW011	Millstreet 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 MILLSTREET WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MILLSTREET 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	584	73
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	455	73
Total Phosphorus (as P) mg/l	12	6.85	1.79
COD-Cr mg/l	12	1310	205
Total Nitrogen mg/l	12	51	17
Hydraulic Capacity	N/A	6620	1376

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 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 - TPEFF3900D0332SW011

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	21	Pass
Suspended Solids mg/l	25	62.5	N/A	12	N/A	N/A	2.68	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	20	40	N/A	12	N/A	N/A	2.38	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.33	Pass
Ammonia-Total (as N) mg/l	0.8	1.6	N/A	12	N/A	N/A	0.063	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.5	1	N/A	12	N/A	N/A	0.141	Pass
Acenaphthylene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Benzene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Benzo(a)pyrene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Dieldrin µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Cobalt - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
Copper - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	7.50	
Lead - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Linuron µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Naphthalene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Isodrin µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Tin - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Atrazine µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Boron - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Barium - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Fluoranthene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Cyanide (unspecified) µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
gamma-BHC / HCH (Lindane) µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Glyphosate µg/l	N/A	N/A	N/A	2	N/A	N/A	0.450	
Pyrene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
Trichlorobenzene (all isomers) µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Xylenes (Total) µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Vanadium - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Benzo(k)fluoranthene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Arsenic - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
1,2-Dichloroethane µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Benzo(b)fluoranthene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Chloride mg/l	N/A	N/A	N/A	2	N/A	N/A	48	
Phenanthrene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Hexachlorobenzene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Molybdenum - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Mecoprop µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
2,6-Dichlorobenzamide µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Tetrachloroethylene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Anthracene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Beta-BHC /Beta-HCH µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Acenaphthene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Antimony - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
alpha BHC / Alpha-HCH µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Chrysene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Dibenzo(a,h)anthracene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Chloromethane µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Ethylbenzene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Fluoride mg/l	N/A	N/A	N/A	2	N/A	N/A	0.400	
Polyaromatic Hydrocarbons (PAH) - Sum µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
Nickel - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	2.00	
Trichloroethene (all isomers) µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Total Hardness (as CaCO3) mg/l	N/A	N/A	N/A	2	N/A	N/A	123	
Toluene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Cadmium - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Benzo(g,h,i)perylene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Dichlobenil µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Chromium - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Carbon Tetrachloride µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Diuron µg/l	N/A	N/A	N/A	2	N/A	N/A	0.080	
Conductivity @20°C µS/cm	N/A	N/A	N/A	2	N/A	N/A	436	
Chloroform µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
Selenium - filtered µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Hexachlorobutadiene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
MCPA µg/l	N/A	N/A	N/A	2	N/A	N/A	0.250	
Indeno(1,2,3-c,d)pyrene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Zinc - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	99	
Sum 3_IWW: HCHs µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Simazine µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
2,4-Dichlorophenol µg/l	N/A	N/A	N/A	2	N/A	N/A	0.250	
Fluorene µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Mercury - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Isoproturon µg/l	N/A	N/A	N/A	2	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 TPEFF3900D0332SW011

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	126677, 92048	RS18F030300	No	No	Yes	No	Unassigned
Downstream	128139, 92288	RS18F030390	No	No	Yes	No	Good

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 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 - MILLSTREET WWTP

2.1.4.1 Treatment Efficiency Report - Millstreet 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)
cBOD	36054	1166	97
SS	35881	1315	96
TN	8442	N/A	N/A
TP	880	N/A	N/A
COD	100703	10516	90

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

2.1.4.2 Treatment Capacity Report Summary - Millstreet 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.

Millstreet WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	4320
DWF to the Treatment Plant (m^3/day)	786
Current Hydraulic Loading - annual max (m^3/day)	6620

Millstreet WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	1376
Organic Capacity (PE) - As Constructed	3220
Organic Capacity (PE) - Collected Load (peak week)[Note1]	2824
Organic Capacity (PE) - Remaining	396
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 - MILLSTREET 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)
Domestic /Septic Tank Sludge	12	Volume (m3)	53	0	No	Yes	Yes
Domestic /Septic Tank Sludge	16	Volume (m3)	71	0	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 2022.			

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 Uisce Éireann 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	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2022	2
Number of Incidents reported to the EPA via EDEN in 2022	2
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 2022 (No. of events)	Total volume discharged in 2022 (m3)	Monitoring Status
SW005	126808,89966	Yes	Low Significance	Meeting Criteria	Unknown	13	Monitored
SW004	126354,90497	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW010	127235,90623	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW006	127235,90623	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW008	127828,90347	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW007	127398,91013	Yes	Low Significance	Meeting Criteria	Unknown	54638	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 2022 (No. of events)	Total volume discharged in 2022 (m3)	Monitoring Status
SW009	127398,91013	Yes	Low Significance	Meeting Criteria	Unknown	14289	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 monitored SWOs in the agglomeration in the year (m3)?	68940
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?	N/A

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
D0332-SIP.01	Additional storm water overflows to be assessed in accordance with Condition 3.4.4 and if not in compliance with DoECLG criteria following assessment, upgrade of sewer network to ensure storm water overflow meets DoECLG criteria	C	08/11/2021	No	Not Started		
D0332-SIP.02	SW004 to be assessed and brought into compliance with DoECLG criteria	C	08/11/2021	No	Not Started	2022	
D0332-SIP.03	SW006 to be assessed and brought into compliance with DoECLG criteria	C	08/11/2021	No	Not Started	2022	
D0332-SIP.04	SW010 to be assessed and brought into compliance with DoECLG criteria	C	08/11/2021	No	Not Started	2022	

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
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	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:

Signed: Date: 25/05/2023

This AER has been produced by Uisce Éireann'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

Ambient Monitoring Point from WWDL (or as agreed with EPA)	*Irish Grid Reference*	EPA Feature Coding Tool code	Receiving Waters Designation (Y/N)				WFD Status
			Bathing Water	Drinking Water	FWPM	Shellfish	
RS18F030300	126677, 92048	TPEFF0500D0332SW001	No	No	Yes	No	Unassigned
RS18F030390	128139, 92288	TPEFF0500D0332SW001	No	No	Yes	No	Good

Ambient Impact Assessment Table

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	%EQS
cBOD mg/l	RS18F030300	1.4	RS18F030390	1.3	1.500	
Ortho-Phosphate (as P) mg/l	RS18F030300	0.016	RS18F030390	0.014	0.035	
Ammonia (as N) mg/l	RS18F030300	0.023	RS18F030390	0.021	0.065	
pH pH units	RS18F030300	7.6	RS18F030390	7.6		
Dissolved Oxygen %saturation or mg/l	RS18F030300	97.6	RS18F030390	94		
Suspended Solids mg/l	RS18F030300	5.5	RS18F030390	5.3		
Total Nitrogen (as N) mg/l						
Total Phosphorus (as P) mg/l						
Dissolved Inorganic Nitrogen (as N) mg/l						
Total Oxidised Nitrogen (as N) mg/l						