Annual Environmental Report

2023

Fermoy

D0058-01

CONTENTS

7 APPENDIX

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0058-01, Fermoy, 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

There was no major capital changes undertaken.

1.2 TREATMENT SUMMARY

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

- Fermoy WWTP with a Plant Capacity PE of 11000, 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
TPEFF0500D0058SW001	Fermoy WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l ortho-Phosphate (as P) - unspecified mg/l Total Phosphorus (as P) mg/l

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 FERMOY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - FERMOY 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
COD-Cr mg/l	12	921	359
Total Nitrogen mg/l	12	54	21
Suspended Solids mg/l	12	606	200
Total Phosphorus (as P) mg/l	12	6.58	2.07
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	372	112
Hydraulic Capacity	N/A	17346	5260

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’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF0500D0058SW001

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	24	Pass
Suspended Solids mg/l	25	62.5	N/A	12	1	N/A	9.14	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	N/A	N/A	3.22	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.69	Pass
Ammonia-Total (as N) mg/l	3	3.6	N/A	12	2	2	1.96	Fail
Total Phosphorus (as P) mg/l	2	2.4	N/A	12	1	1	0.201	Fail
ortho-Phosphate (as P) - unspecified mg/l	1.5	1.8	N/A	12	1	1	0.109	Fail
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	1553	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	7.31	

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):

Refer to the incidents section of this report

Significance of Results:

The WWTP is not in compliance with the ELV, as set out in the WWDL. The impact on receiving waters is assessed further in section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0500D0058SW001

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	182190, 98804	RS18B022260	No	No	Yes	No	Good
Upstream	181502, 98713	RS18B022230	No	No	Yes	No	Good
Downstream	182516, 99553	RS18B022300	No	No	Yes	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	RS18B022260	2.01	RS18B022300	0.790	1.50	-81.5
BOD - 5 days (Total) mg/l	RS18B022230	1.27	RS18B022300	0.790	1.50	-32.1
Ammonia-Total (as N) mg/l	RS18B022260	0.042	RS18B022300	0.017	0.065	-37
Ammonia-Total (as N) mg/l	RS18B022230	0.012	RS18B022300	0.017	0.065	7.8
ortho-Phosphate (as P) - unspecified mg/l	RS18B022230	N/A	RS18B022300	0.014	0.035	40.6
ortho-Phosphate (as P) - unspecified mg/l	RS18B022260	0.025	RS18B022300	0.014	0.035	-30.6
Dissolved Oxygen % O2	RS18B022230	97	RS18B022300	96	N/A	
Temperature °C	RS18B022230	14	RS18B022300	12	N/A	
Conductivity @20°C µS/cm	RS18B022230	291	RS18B022300	305	N/A	
Temperature °C	RS18B022260	14	RS18B022300	12	N/A	
Nitrate (as N) mg/l	RS18B022230	2.62	RS18B022300	2.59	N/A	
pH pH units	RS18B022230	7.79	RS18B022300	7.76	N/A	
Dissolved Oxygen mg/l	RS18B022230	10	RS18B022300	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
Total Oxidised Nitrogen (as N) mg/l	RS18B022230	2.62	RS18B022300	2.84	N/A	
Dissolved Oxygen % Saturation	RS18B022260	96	RS18B022300	102	N/A	
Nitrite (as N) mg/l	RS18B022230	0.003	RS18B022300	0.004	N/A	
Orthophosphate (as P) - filtered mg/l	RS18B022230	0.024	RS18B022300	0.023	N/A	
pH pH units	RS18B022260	7.78	RS18B022300	7.76	N/A	

Significance of Results:

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

The ambient monitoring results do not meet the required EQS at the upstream 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 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 unknown.

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 - FERMOY WWTP

2.1.4.1 Treatment Efficiency Report - Fermoy 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	379292	19581	95
TN	39678	15677	60
COD	679339	50833	93
TP	3923	431	89
cBOD	211540	6903	97

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

2.1.4.2 Treatment Capacity Report Summary - Fermoy 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.

Fermoy WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	5693
DWF to the Treatment Plant (m^3/day)	2475
Current Hydraulic Loading - annual max (m^3/day)	17346

Fermoy WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	5260
Organic Capacity (PE) - As Constructed	11000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	9342
Organic Capacity (PE) - Remaining	1658
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 - FERMOY 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.							

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 2023.			

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	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Emergency overflow caused by power failure	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	No	No
Uncontrolled release	Plant or equipment breakdown at WWTP	No	No

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Emergency overflow caused by ragging or blocking	No	No
Breach of ELV	Other (add details)	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	5
Number of Incidents reported to the EPA via EDEN in 2023	5
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 2023 (No. of events)	Total volume discharged in 2023 (m3)	Monitoring Status
SW5	181190,98615	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW6	181400,98558	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW3	181463,98719	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW3	181463,98719	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW002b	182197,98795	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW002a	182197,98795	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	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 2023 (No. of events)	Total volume discharged in 2023 (m3)	Monitoring Status
-	181086,98501	No	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW002c	182197,98795	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	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 wastewater discharge by metered SWOs during 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?	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
D0058-SIP:01	Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoECLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	C	01/01/2015	Yes	Works Completed		

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	Included in this AER
D0058-01-Pearl Mussel Report	Yes	No
D0058-01-Priority Substances Assessment	Yes	No

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	Yes
List reason e.g. changes to monitoring requirements	Ambient Monitoring Location Changes
Have these processes commenced?	No
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: 11/04/2024

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

Head of Environmental Regulation.

7 APPENDIX

There are no Appendices included