Annual Environmental Report

2024

Mooncoin

D0145-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0145-01, Mooncoin, in Kilkenny 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 major capital or operational changes undertaken.

1.2 TREATMENT SUMMARY

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

- Mooncoin WWTP with a Plant Capacity PE of 2800, the treatment type is 2 - Secondary treatment .

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
TPEFF1500D0145SW001	Mooncoin 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 MOONCOIN WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MOONCOIN 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
Total Nitrogen mg/l	12	64	33
pH pH units	12	7.97	7.64
Total Phosphorus (as P) mg/l	12	16	4.93
COD-Cr mg/l	12	516	270
Suspended Solids mg/l	12	314	144
BOD, 5 days with Inhibition (Carbonaceo mg/l	12	216	100
Ammonia-Total (as N) mg/l	12	48	26
Hydraulic Capacity	N/A	608	321

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 - TPEFF1500D0145SW001

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	19	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	6.29	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	25	50	N/A	12	N/A	N/A	4.16	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	12	N/A	N/A	4.63	Pass
Ammonia-Total (as N) mg/l	10	12	N/A	12	N/A	N/A	0.130	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.48	Pass

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 Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	1.52	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	5.34	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	12	N/A	N/A	1.40	

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 TPEFF1500D0145SW001

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	248789, 115586	TW31002103SR5003	No	No	No	No	Moderate
Downstream	251740, 112535	TW31002103SR5005	No	No	No	No	Moderate

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 coastal/transitional 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 WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.

Based on ambient monitoring results a deterioration in ortho-phosphate, Ammonia, Salinity (lab), Salinity, Silica, Temperature,, 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.

The discharge from the wastewater treatment plant does have an observable impact on the coastal/transitional water quality.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - MOONCOIN WWTP

2.1.4.1 Treatment Efficiency Report - Mooncoin 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)
COD	29245	2146	93
TP	534	169	68
SS	15573	700	96
cBOD	10849	463	96
TN	3623	594	84

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

2.1.4.2 Treatment Capacity Report Summary - Mooncoin 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.

Mooncoin WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	1890
DWF to the Treatment Plant (m^3/day)	630
Current Hydraulic Loading - annual max (m^3/day)	608
Average Hydraulic loading to the Treatment Plant (m^3/day)	321
Organic Capacity (PE) - As Constructed	2800
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1360
Organic Capacity (PE) - Remaining	1440
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 - MOONCOIN 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 2024.			

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)
There were no reportable incidents in 2024.			

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2024	0
Number of Incidents reported to the EPA via EDEN in 2024	0
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 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
There are no Storm Water Overflows in this Agglomeration.							

The contents presented in this table include the most up to date information available at the time of writing. 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?	N/A
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
There are no Specified Improvement Programmes for this Agglomeration.							

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

N/A

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
D0145-01-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?	N/A
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	N/A
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	No

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

Signed: Date: 26/06/2025

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

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambient Points

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	
TW31002103SR5003	248789, 115586	TPEFF1500D0145SW001	No	No	No	No	Moderate
TW31002103SR5005	251740, 112535	TPEFF1500D0145SW001	No	No	No	No	Moderate

Ambient Impact Assessment Table

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Location	EQS (Mean)	%EQS
BOD - 5 days (Total) mg/l	TW31002103SR5003	1.029	TW31002103SR5005		4.0	
Ortho-Phosphate (as P) mg/l	TW31002103SR5003	0.011	TW31002103SR5005	0.015	0.06	6.7
Ammonia (as N) mg/l	TW31002103SR5003	0.028	TW31002103SR5005	0.036		
pH pH units	TW31002103SR5003	8.275	TW31002103SR5005	8.213		
Chlorophyll µg/l	TW31002103SR5003	11.400	TW31002103SR5005	9.175		
Depth m	TW31002103SR5003	3.138	TW31002103SR5005	3.838		
Dissolved Oxygen % Saturation	TW31002103SR5003	100.375	TW31002103SR5005	94.625	70 - 130	-5.8
Salinity (Lab) 0/oo	TW31002103SR5003	0.4	TW31002103SR5005	1.413		
Salinity PSU	TW31002103SR5003	0.488	TW31002103SR5005	1.475		
T (as N) mg/l	TW31002103SR5003	2.175	TW31002103SR5005	2.050		
Silica (as SiO2) mg/l	TW31002103SR5003	1.461	TW31002103SR5005	1.543		
Station Depth m	TW31002103SR5003	6.375	TW31002103SR5005	7.850		
Temperature °C	TW31002103SR5003	15.338	TW31002103SR5005	15.350		
TOC (as NPOC) mg/l	TW31002103SR5003	2.950	TW31002103SR5005			
Pheophytin a µg/l	TW31002103SR5003	2.075	TW31002103SR5005	2.075		
Transparency m	TW31002103SR5003	0.825	TW31002103SR5005	0.550		

Ambient Data Tables

				Ammonia-Total (as N)	BOD- 5 days (Total)	Chlorophyll a (Fluorescence)	Depth	Dissolved Oxygen	ortho-Phosphate (as P) - unspecified	pH	Salinity	Salinity (Lab)	Silica (as SiO2)	Station Depth	Temperature	TOC (as NPOC)	Total Oxidised Nitrogen (as N)	Pheophytin a	Transparency
Monitoring Entity	Station Reference	Trac Sample Method	Sample Date	mg/l	mg/l	µg/l	m	% Saturation	mg/l	pH units	PSU	0/oo	mg/l	m	°C	mg/l	mg/l	µg/l	m
River Suir	TW31002103SR5003	Bottom	15/02/2024	0.034	<1		6.4	92	0.011	8	0.2	0.1	5.2	6.5	9.3		1.7		1.2
River Suir	TW31002103SR5003	Bottom	10/06/2024	0.019	<1		6.4	106	0.0094	8.4	0.3	0.2	0.13	6.5	15.2		2.3		0.8
River Suir	TW31002103SR5003	Bottom	25/07/2024	0.043	1.1		6.8	95	0.013	8.2	1.2	1.1	0.39	6.9	18		2		0.8
River Suir	TW31002103SR5003	Bottom	14/08/2024	0.023	2.1		5.5	108	0.011	8.5	0.3	0.2	0.13	5.6	18.7		2.6		0.5
River Suir	TW31002103SR5003	Surface	15/02/2024	0.038	<1	4.3	0	92	0.011	8	0.2	0.1	5.2	6.5	9.3	5	2	1.4	1.2
River Suir	TW31002103SR5003	Surface	10/06/2024	0.013	<1	10	0	107	0.0096	8.4	0.3	0.2	<0.1	6.5	15.2	2.6	2.5	2	0.8
River Suir	TW31002103SR5003	Surface	25/07/2024	0.035	<1	8.3	0	94	0.012	8.2	1.1	1	0.38	6.9	18.1	2.2	1.7	2.9	0.8
River Suir	TW31002103SR5003	Surface	14/08/2024	0.017	1.5	23	0	109	0.0073	8.5	0.3	0.3	0.12	5.6	18.9	2	2.6	2.8	0.5
			Mean	0.02775	1.029441738	11.4	3.1375	100.375	0.0105375	8.275	0.4875	0.4	1.46142767	6.375	15.3375	2.95	2.175	2.275	0.825

				Ammonia-Total (as N)	Chlorophyll a (Fluorescence)	Depth	Dissolved Oxygen	ortho-Phosphate (as P) - unspecified	pH	Salinity	Salinity (Lab)	Silica (as SiO2)	Station Depth	Temperature	Total Oxidised Nitrogen (as N)	Pheophytin a	Transparency
Monitoring Entity	Station Reference	TraC Sample Method	Sample Date	mg/l	µg/l	m	% Saturation	mg/l	pH units	PSU	0/oo	mg/l	m	°C	mg/l	µg/l	m
River Suir	TW31002103SR5005	Bottom	15/02/2024	0.039		6.6	91	0.013	8	0.2	0.1	6.8	6.8	8.7	2.6		1
River Suir	TW31002103SR5005	Bottom	10/06/2024	0.022		7.8	98	0.014	8.3	0.9	0.9	8	8	15.5	1.4		0.5
River Suir	TW31002103SR5005	Bottom	25/07/2024	0.072		9.3	85	0.021	8.1	4	4	9.5	9.5	18	1.9		0.5
River Suir	TW31002103SR5005	Bottom	14/08/2024	0.016		7	102	0.011	8.4	1.2	1.1	7.1	7.1	19	2.5		0.2
River Suir	TW31002103SR5005	Surface	15/02/2024	0.04	1.9	0	92	0.013	8	0.2	0.1	6.8	6.8	8.8	2.4	1.1	1
River Suir	TW31002103SR5005	Surface	10/06/2024	0.022	5.6	0	101	0.014	8.4	0.8	0.7	8	8	15.6	1.4	1.6	0.5

Monitoring Entity	Station Reference	TraC Sample Method	Sample Date	Ammonia-Total (as N) mg/l	Chlorophyll a (Fluorescence) µg/l	Depth m	Dissolved Oxygen % Saturation	ortho-Phosphate (as P) - unspecified mg/l	pH pH units	Salinity PSU	Salinity (Lab) 0/oo	Silica (as SiO2) mg/l	Station Depth m	Temperature °C	Total Oxidised Nitrogen (as N) mg/l	Pheophytin a µg/l	Transparency m
River Suir	TW31002103SR5005	Surface	25/07/2024	0.067	5.2	0	86	0.022	8.1	3.5	3.5	9.5	9.5	18.1	1.8	2.5	0.5
River Suir	TW31002103SR5005	Surface	14/08/2024	<0.01	24	0	102	0.014	8.4	1	0.9	7.1	7.1	19.1	2.4	3.1	0.2
			Mean	0.035633883	9.175	3.8375	94.625	0.01525	8.2125	1.475	1.4125	1.5425	7.85	15.35	2.05	2.075	0.55

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of LOD/sqrt(2) was used in calculating the mean and 95%ile concentrations.