Annual Environmental Report

2024

Kilcoole

D0087-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0087-01, Kilcoole, in Wicklow 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. Refer to Section 4.4.2.

1.2 TREATMENT SUMMARY

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

- Kilcoole WWTP with a Plant Capacity PE of 4000, 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
TPEFF3400D0087SW001	Kilcoole 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 KILCOOLE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - KILCOOLE 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	1257	433
BOD, 5 days with Inhibition (Carbonaceous) mg/l	12	337	168
Suspended Solids mg/l	12	334	141
Total Phosphorus (as P) mg/l	12	9.80	5.10
Total Nitrogen mg/l	12	70	37
Hydraulic Capacity	N/A	4049	915

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 - TPEFF3400D0087SW001

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	30	75	N/A	12	N/A	N/A	6.48	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	20	40	N/A	12	N/A	N/A	1.94	Pass
pH pH units	6	9	N/A	12	N/A	N/A	7.55	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	N/A	N/A	0.164	Pass
ortho-Phosphate (as P) - unspecified mg/l	2	2.4	N/A	12	N/A	N/A	0.173	Pass
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.385	
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	426	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	5.16	

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)
Faecal coliforms cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	5358	

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 TPEFF3400D0087SW001

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	330730, 207493	RS10K010570	No	No	No	No	Poor
Downstream	330850, 207440	RS10K010578	No	No	No	No	Poor

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 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 BOD, Ortho-P & 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 - KILCOOLE WWTP

2.1.4.1 Treatment Efficiency Report - Kilcoole 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)
TN	12908	1534	88
COD	151330	5542	96
cBOD	58770	577	99
TP	1781	114	94
SS	49208	1927	96

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

2.1.4.2 Treatment Capacity Report Summary - Kilcoole 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.

Kilcoole WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	1800
DWF to the Treatment Plant (m^3/day)	600
Current Hydraulic Loading - annual max (m^3/day)	4049

Kilcoole WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	915
Organic Capacity (PE) - As Constructed	4000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	2818
Organic Capacity (PE) - Remaining	1182
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 - KILCOOLE 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 (m^3)	Monitoring Status
SWOP1	330719, 207500	Yes	Low Significance	Meeting Criteria	88	4994	Monitored

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 (m^3)?	4994
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
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
Kilcoole WWTP is currently in Stage 2 Preliminary Business Case. Upon completion of Stage 2, funding will be sought to continue to Stages 3 (Final Business Case) and 4 (Implementation) during RC4. However, having regard to the current funding constraints expected in RC4 there is a significant risk to UÉ being in a position to commence or complete this project within the RC4 investment cycle 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
D0087-01-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	N/A

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

Date: 30/04/2025

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

Kilcoole 2024 Ambient Monitoring Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)			
			Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	330730, 207493	RS10K010570	No	No	No	No
Downstream Monitoring Point	330850, 207440	RS10K010578	No	No	No	No

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD (Mean mgl/l)	o-Phosphate (as P) (Mean mg/l)	Ammonia (as N) (mean mg/l)
Upstream Monitoring Point	Poor	1.005	0.0225	0.024
Downstream Monitoring Point	Poor	1.237	0.0435	0.076
Difference		*0.232*	*0.0210*	*0.052*
EQS		1.500	0.035	0.065
% of EQS		15.444%	60.130%	80.559%

Kilcoole 2024 Ambient Monitoring Data

Station	Sample Date	BOD	Conductivity @ 20°C	Dissolved Oxygen	Nitrite N	Ortho P	pH	DO %	Temp	Ammonia	Total Oxidised Nitrogen N	Total Nitrogen
		mg/l	µS/cm	mg/l	mg/l	mg/l	pH Units	&Sat	Deg C	mg/l	mg/l	mg/l
Upstream	09/01/2024	< 0.5	1037	13	0.01	0.021	8.3	99	6.8	0.02	3.7	4.2
Upstream	06/02/2024	1.7	1063	10.8	0.014	0.03	8.3	96	10.1	0.04	4	3.9
Upstream	13/03/2024	0.9	1057	10.7	0.011	0.026	8.4	101	12.9	0.02	3.9	4
Upstream	09/04/2024	0.9	1052	11.3	0.01	0.028	8.4	98	9.2	0.02	3.7	4
Upstream	07/05/2024	0.8	508	11.1	0.006	0.018	8.5	103	11.8	0.02	4.2	3.9
Upstream	25/06/2024	0.9	498	10.3	0.006	0.022	8.3	104	15.8	0.03	4	4
Upstream	06/08/2024	1.1	490	10.5	0.005	0.02	8.4	105	15.2	0.04	4	3.6
Upstream	04/09/2024	1.4	490	10.5	0.007	0.023	8.2	99	12.7	0.03	3.8	3.7
Upstream	08/10/2024	0.9	493	10.3	0.007	0.017	8.2	97	12.5	0.01	2.5	3.2
Upstream	05/11/2024	1.1	503	10.4	0.006	0.02	8	100	13.5	0.01	3.5	3.3
	Mean	**1.005**	**719.100**	**10.890**	**0.008**	**0.023**	**8.300**	**100.200**	**12.050**	**0.024**	**3.730**	**3.780**
	95%ile	**1.565**	**1060.300**	**12.235**	**0.013**	**0.029**	**8.455**	**104.550**	**15.530**	**0.040**	**4.110**	**4.110**
Downstream	09/01/2024	< 0.5	1074	11.7	0.026	0.023	8.3	97	7	0.06	4	4.2
Downstream	06/02/2024	2.3	1079	10.3	0.05	0.05	8.2	91	9.9	0.18	3.6	3.9
Downstream	13/03/2024	1.2	1069	10.5	0.028	0.034	8.3	99	12.8	0.08	4.3	4.1
Downstream	09/04/2024	1.5	1054	11	0.024	0.043	8.2	96	9.2	0.08	3.8	3.8
Downstream	07/05/2024	1.5	513	11	0.011	0.034	8.4	102	12.1	0.05	4.6	3.8
Downstream	25/06/2024	< 0.5	504	10.3	0.01	0.045	8.3	101	14.4	0.06	3.9	3.3
Downstream	06/08/2024	1.3	495	10.4	0.009	0.049	8.4	103	14.8	0.05	3.6	4.2
Downstream	04/09/2024	1.3	496	10.1	0.02	0.069	8.1	95	12.7	0.06	3.5	3.4
Downstream	08/10/2024	1.2	494	10.1	0.025	0.051	8.2	96	13.2	0.1	3.1	3.5
Downstream	05/11/2024	1.7	532	9.9	0.045	0.051	7.8	96	14	0.01	3.5	3.7
	Mean	**1.237**	**709.636**	**10.527**	**0.025**	**0.044**	**8.200**	**97.455**	**11.845**	**0.076**	**3.809**	**3.790**

	95%ile	**2.000**	**1076.500**	**11.350**	**0.048**	**0.060**	**8.400**	**102.500**	**14.600**	**0.145**	**4.450**	**4.200**

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.