Annual Environmental Report

2024

Kells

D0127-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0127-01, Kells, in Meath 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 capital works, significant changes or operational changes undertaken in 2024.

1.2 TREATMENT SUMMARY

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

- Kells (Meath) WWTP with a Plant Capacity PE of 9800, 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
TPEFF2300D0127SW001	Kells (Meath) 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 KELLS (MEATH) WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - KELLS (MEATH) 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
BOD, 5 days with Inhibition (Carbonaceous) mg/l	12	302	68
Total Nitrogen mg/l	12	56	26
Suspended Solids mg/l	12	172	110
COD-Cr mg/l	12	628	196
Hydraulic Capacity	N/A	4775	2169

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 - TPEFF2300D0127SW001

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	27	Pass
Suspended Solids mg/l	35	87.5	N/A	12	1	N/A	7.32	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	25	50	N/A	12	N/A	N/A	2.67	Pass
pH pH units	6	9	N/A	12	N/A	N/A	7.53	Pass
Ammonia-Total (as N) mg/l	2	2.4	N/A	12	N/A	N/A	0.258	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	N/A	N/A	0.177	Pass
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.309	

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 TPEFF2300D0127SW001

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	273697, 277272	RS07B011200	No	Yes	No	No	Good
Downstream	276189, 275984	RS07B011300	No	Yes	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	RS07B011200	0.992	RS07B011300	0.932	1.50	-4

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Ammonia-Total (as N) mg/l	RS07B011200	0.017	RS07B011300	0.027	0.065	15.9
ortho-Phosphate (as P) - unspecified mg/l	RS07B011200	0.037	RS07B011300	0.039	0.035	6.3
Alkalinity-total (as CaCO3) mg/l	RS07B011200	100	RS07B011300	110	N/A	
Total Nitrogen mg/l	RS07B011200	1.74	RS07B011300	1.72	N/A	
Total Hardness (as CaCO3) mg/l	RS07B011200	106	RS07B011300	116	N/A	
Conductivity @25°C µS/cm	RS07B011200	261	RS07B011300	285	N/A	
Chloride mg/l	RS07B011200	14	RS07B011300	14	N/A	
Dissolved Oxygen mg/l	RS07B011200	10	RS07B011300	9.92	N/A	
pH pH units	RS07B011200	7.90	RS07B011300	7.84	N/A	
True Colour mg/litre Pt Co	RS07B011200	39	RS07B011300	38	N/A	
Dissolved Oxygen % Saturation	RS07B011200	101	RS07B011300	98	N/A	
Total Oxidised Nitrogen (as N) mg/l	RS07B011200	1.21	RS07B011300	1.55	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
Temperature °C	RS07B011200	9.60	RS07B011300	9.45	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 upstream and the downstream monitoring locations. 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 & Ortho-P 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 - KELLS (MEATH) WWTP

2.1.4.1 Treatment Efficiency Report - Kells (Meath) 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	120245	5950	95
cBOD	74668	2168	97
COD	214309	22181	90

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

2.1.4.2 Treatment Capacity Report Summary - Kells (Meath) 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.

Kells (Meath) WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	5720
DWF to the Treatment Plant (m^3/day)	2205
Current Hydraulic Loading - annual max (m^3/day)	4775
Average Hydraulic loading to the Treatment Plant (m^3/day)	2169
Organic Capacity (PE) - As Constructed	9800
Organic Capacity (PE) - Collected Load (peak week)[Note1]	8319
Organic Capacity (PE) - Remaining	1481
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 - KELLS (MEATH) 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
9	Water Pollution	0	9
10	Sewage	8	1

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	Adverse Weather	No	Yes
Abatement equipment off-line	Other (add details)	No	Yes

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Emergency overflow caused by power failure	No	Yes
Uncontrolled release	Blocked Sewer	No	Yes
Abatement equipment off-line	Adverse Weather	No	Yes
Uncontrolled release	Blocked Sewer	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	No	No
Uncontrolled release	Screen not operating	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Uncontrolled release	Adverse Weather	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2024	10
Number of Incidents reported to the EPA via EDEN in 2024	10
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
SW2	275199, 276285	Yes	Low Significance	Meeting Criteria	Unknown	24269	Monitored
SW3	274667, 276080	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Monitored*

** SW3 is alarmed for operational purposes, but does not have adequate monitoring for AER reporting*

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)?	24269
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes

SWO Summary	
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
D0127-SIP:01	Upgrade to Phosphorus removal system	A	31/12/2014	Yes	Works Completed		
D0127-SIP:02	Upgrading of Storm Water Overflow SW3 to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to	A	31/12/2014	Yes	At Planning Stage		UÉ has assessed that Kells WW Agglomeration WW Network SWO (SW003) is meeting DoEHLG Criteria 2, 3 and 4 (*i.e.*, the overflow is compliant with hydraulic criteria *i.e.*, it only spills during wet weather conditions and has been designed to meet the technical engineering

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
	Storm Water Overflows, 1995"						standards set out in Section 6.2 and 6.3 of the DoEHLG SWO Criteria). A basket type screen was installed on this SWO on 18th September 2019 to mitigate against debris entering the receiving waterbody, the Newrath Stream. In addition, there is a level sensor monitor on SW003, to record activations at times of high flows, where the capacity of the network is exceeded WW Network SWO SW003 in Kells WW agglomeration has no budget allocated for further upgrade or decommissioning in UÉ's Capital Investment Plan for Revenue Control period 4 (2025-2029). As Kells WW agglomeration is not listed as an ECJ catchment, identified on the EPA's Priority Action List (PAL) or identified as a significant pressure on the River Basin Management Plan (RBMP), it has not been allocated funding for RC4.

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
D0127-01-Drinking Water Abstraction Point Risk Assessment	Yes	No
D0127-01-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?	Yes Uisce Éireann issued a WW Discharge Licence Review Application to the EPA on 02/05/2025.
List reason e.g. additional SWO identified	Following a Waste Water Discharge Authorisation (WWDA) examination by the EPA on 21st May 2024, it was recommended that a Waste Water Discharge Licence (WWDL) Review Application be prepared and submitted to the EPA for determination. It was considered that the current WWDL, D0127-01, does not satisfy the environmental requirements of the WWDA 2007 Regulations as amended, and that a WWDL review is required. The reasons for this conclusion and recommendation are summarised as follows: • There has been a material change in the extent of the discharge to which the existing WWDL relates, as a result of an increase in treatment capacity since the grant of the WWDL; and • The WWDL was granted over 3 years ago.

Parameter	Answer
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	WW Discharge Licence Review Application, includes Ambient Monitoring Location Change, for Health & Safety reasons.
Have these processes commenced?	Yes
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: 10/07/2025

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

There are no Appendices included.