

# Annual Environmental Report

2023



CLH/Ringaskiddy

D0057-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0057-01, CLH/Ringaskiddy, 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.

## 1.2 TREATMENT SUMMARY

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

- Cork Lower Harbour WWTP with a Plant Capacity PE of 65000, 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
TPEFF0500D0057SW001	Cork Lower Harbour WWTP	Combined	Non-Compliant	BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l COD-Cr mg/l Suspended Solids 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 CORK LOWER HARBOUR WWTP - COMBINED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - CORK LOWER HARBOUR 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 Phosphorus (as P) mg/l	26	9.08	4.39
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	26	384	104
Total Nitrogen mg/l	26	52	21
Suspended Solids mg/l	26	1004	175
COD-Cr mg/l	26	1775	322
Hydraulic Capacity	N/A	48337	18891

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 greater 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 - TPEFF0500D0057SW100

Parameter	UWWTD ELV	ELV with Interpretation included	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)
<b>COD-Cr mg/l</b>	125	250	N/A	26	N/A	N/A	42.5	Pass
<b>Suspended Solids mg/l</b>	35	87.5	N/A	26	N/A	N/A	3.14	Pass
<b>Total Nitrogen mg/l</b>	28.5	34.2	N/A	26	N/A	N/A	14.04	Pass
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	25	50	N/A	26	N/A	N/A	2.92	Pass

### Cause of Exceedance(s):

N/A

### Significance of Results:

The WWTP is compliant with the ELVs set in the Urban Wastewater Treatment Directive.

### 2.1.3 EFFLUENT MONITORING SUMMARY - COMBINED - TPEFF0500D0057SW001

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)
<b>COD-Cr mg/l</b>	125	250	N/A	26	2	1	71	Fail
<b>Suspended Solids mg/l</b>	35	87.5	N/A	26	6	3	30	Fail
<b>Total Nitrogen mg/l</b>	28.5	34.2	N/A	26	N/A	N/A	12	Pass
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	25	50	N/A	26	4	1	13	Fail
<b>pH pH units</b>	9	9	N/A	26	N/A	N/A	7.53	Pass
<b>Total Oxidised Nitrogen (as N) mg/l</b>	N/A	N/A	N/A	26	N/A	N/A	2.29	
<b>Total Phosphorus (as P) mg/l</b>	N/A	N/A	N/A	26	N/A	N/A	2.61	
<b>Ammonia-Total (as N) mg/l</b>	N/A	N/A	N/A	26	N/A	N/A	9.03	

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)
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	N/A	N/A	N/A	26	N/A	N/A	2.23	

Notes:

1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

2 – For parameters where a mean ELV applies 3 – For pH the WWDA specifies a range of pH 6-9

### Cause of Exceedance(s):

Refer to incident section of this report.

### Significance of Results:

The WWTP is non-compliant with the ELV's set in the wastewater Discharge License. The impact on receiving waters is assessed further in Section 2.



## 2.1.4 AMBIENT MONITORING SUMMARY FOR THE COMBINED DISCHARGE TPEFF0500D0057SW001

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	181358, 62521	CW05003149LE9001	No	No	No	Yes	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 not compliant with the ELV's set in the wastewater discharge licence.

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.

## 2.1.5 OPERATIONAL PERFORMANCE SUMMARY - CORK LOWER HARBOUR WWTP

### 2.1.5.1 Treatment Efficiency Report - Cork Lower Harbour 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)
TP	28911	17849	38
cBOD	649877	87100	87
TN	138804	80252	42
SS	1152947	204238	82
COD	2123995	487375	77

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

### 2.1.5.2 Treatment Capacity Report Summary - Cork Lower Harbour 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.

Cork Lower Harbour WWTP	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	43875
DWF to the Treatment Plant (m <sup>3</sup> /day)	14625

Cork Lower Harbour WWTP	
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	48337
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	18891
Organic Capacity (PE) - As Constructed	65000
Organic Capacity (PE) - Collected Load (peak week) <sup>Note1</sup>	47193
Organic Capacity (PE) - Remaining	17807
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.

## 2.1.6 SLUDGE / OTHER INPUTS - CORK LOWER HARBOUR 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
<b>There were no relevant environmental complaints in 2023.</b>			

### 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)
<b>Uncontrolled release</b>	Blocked Sewer	No	Yes
<b>Uncontrolled release</b>	Blocked Sewer	No	No
<b>Spillage</b>	Blocked Sewer	Yes	No

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Plant or equipment breakdown at WWTP	Yes	No
Breach of ELV	WWTP upgrade required to meet ELV	Yes	No
Uncontrolled release	Broken Sewer Pipe	Yes	No
Uncontrolled release	Adverse Weather	Yes	No
Uncontrolled release	Adverse Weather	Yes	No
Uncontrolled release	Adverse Weather	Yes	No

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	9
Number of Incidents reported to the EPA via EDEN in 2023	9
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
SW019	174439,62606	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW024	173154,62416	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW005	173066,62347	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW006	178818,61289	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW007	179639,61145	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW008	-,-	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not 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
SW009	-,-	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
SW010	-,-	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
SW011	-,-	Yes	TBC	Not yet Assessed	Unknown	Unknown	Not Monitored
SW012	-,-	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
SW003	174443,62603	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW025	173315,62498	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	178202,64724	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	-,-	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
SW002	175797,64929	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW021	172986,62329	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	TBC

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
SW004	173154,62416	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW022	181358,62521	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	TBC
SW023	179845,61439	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	TBC

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?	No



## 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
<b>D0057-SIP:01</b>	SW 02 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
<b>D0057-SIP:02</b>	Infiltration programme	C	01/01/2015	Yes	Works Completed		
<b>D0057-SIP:03</b>	Installations of rising mains, gravity sewers, pumping stations and marine pipeline including upgrading of existing facilities	C	01/01/2015	Yes	Works Completed		
<b>D0057-SIP:04</b>	SW 03 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
<b>D0057-SIP:05</b>	SW 04 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		

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
<b>D0057-SIP:06</b>	SW 05 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
<b>D0057-SIP:07</b>	SW 06 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
<b>D0057-SIP:08</b>	SW 07 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
<b>D0057-SIP:09</b>	WWTP and ancillary works to provide secondary treatment	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
<b>No additional improvements planned at this time.</b>				

## 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
D0057-01-Shellfish Impact 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
List reason e.g. additional SWO identified	Alteration to Agglomeration Boundary and proposed new emission limit values
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?	Yes
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: 15/04/2024

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

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	
<b>CW05003149LE9001</b>	<b>181358, 62521</b>		No	No	No	Yes	Moderate

#### Ambient Impact Assessment Table

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean
Ortho-Phosphate (as P) – unspecified	<b>CW05003149LE9001</b>	0.0259
Ammonia (as N) mg/l	<b>CW05003149LE9001</b>	0.033
pH pH units	<b>CW05003149LE9001</b>	8.06
Dissolved Oxygen %saturation or mg/l	<b>CW05003149LE9001</b>	101.2
Total Oxidised Nitrogen (as N) mg/l	<b>CW05003149LE9001</b>	0.078