

Annual Environmental Report

2021



Askeaton

D0315-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0315-01, Askeaton, in Limerick 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.

New plant needed. Upgrade to pumping station in planning stage.

1.2 TREATMENT SUMMARY

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

- Askeaton WWTP with a Plant Capacity PE of 550, the treatment type is 1 - Primary 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
TPEFF1900D0315SW001	Askeaton WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l COD-Cr mg/l ortho-Phosphate (as P) - unspecified 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 ASKEATON WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - ASKEATON 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	6	56	41
Suspended Solids mg/l	6	129	94
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	152	94
COD-Cr mg/l	6	779	383
Total Phosphorus (as P) mg/l	6	6.85	4.87
Hydraulic Capacity	N/A	458	210

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 - TPEFF1900D0315SW001

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	6	6	3	273	Fail
Suspended Solids mg/l	35	87.5	N/A	6	6	2	87	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	6	6	6	126	Fail
Ammonia-Total (as N) mg/l	15	18	N/A	6	6	5	32	Fail
pH units	9.00	9.00	N/A	6	N/A	N/A	7.61	Pass
ortho-Phosphate (as P) - unspecified mg/l	1.00	1.20	N/A	6	6	6	3.36	Fail
Dissolved Inorganic Nitrogen (as N) mg/l	N/A	N/A	N/A	6	N/A	N/A	33	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	6	N/A	N/A	0.707	

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):

Inadequate infrastructure.

Significance of Results:

Plant unable to meet ELV limits.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1900D0315SW001

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	133883, 150742	RS24D021450	No	No	No	No	Unassigned

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 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 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 , concentrations downstream of the effluent discharge is noted.

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 - ASKEATON WWTP

2.1.4.1 Treatment Efficiency Report - Askeaton 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	3531	N/A	N/A
TP	418	N/A	N/A
COD	32834	23690	28
SS	8038	7559	5.96
cBOD	8039	10986	-36.67

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

2.1.4.2 Treatment Capacity Report Summary - Askeaton 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.

Askeaton WWTP	
Peak Hydraulic Capacity (m ³ /day) - As Constructed	411
DWF to the Treatment Plant (m ³ /day)	137

Askeaton WWTP	
Current Hydraulic Loading - annual max (m ³ /day)	458
Average Hydraulic loading to the Treatment Plant (m ³ /day)	210
Organic Capacity (PE) - As Constructed	550
Organic Capacity (PE) - Collected Load (peak week) ^{Note1}	1447
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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 - ASKEATON 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
3	Discharge to waters	3	0

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 Irish Water 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	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No
Spillage	Broken Sewer Pipe	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Spillage	Adverse Weather	1	No	Yes
Uncontrolled release	Network Infrastructure	1	Yes	No
Uncontrolled release	Screen maintenance issue	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	6
Number of Incidents reported to the EPA via EDEN in 2021	6
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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
SW-5	134093, 150439	No	Low	Meeting	Unknown	Unknown	Not Monitored
SW-2	134015, 150297	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW-3	134106, 150271	Yes	Low	Meeting	Unknown	Unknown	Not 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 sewage was discharged via SWOs in the agglomeration in 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

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
D0315-SIP:01	New pumping station and storm-water storage capacity	C	01/01/2014	No	At Planning Stage		Options assessment being undertaken to agree scope. Post 2024 timeline for completion
D0315-SIP:02	New waste water treatment plant and ancillary works	C	01/01/2014	Yes	At Planning Stage		Options assessment being undertaken to agree scope. Post 2024 timeline for completion.
D0315-SIP:03	SW-1 to be discontinued when discharge from SW4 commences	A	31/12/2020	Yes	At Planning Stage		Options assessment being undertaken to agree scope. Post 2024 timeline for completion.

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	Year included in AER	Included in this AER
There is no Licence Specific Report Required in this AER Annual Review.			

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
Has a Technical amendment/licence review application been submitted to the Agency by IW?	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: 10/05/2022

This AER has been produced by Irish Water's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of ,

Katherine Walshe

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambient Monitoring Data for Coastal/transitional waters - Where the ambient data is not in EIMS, please complete the table below and append with ambient monitoring results (into 1 combined PDF). Please read notes tab for further info on coastal and transitional assessment.

Ambient Monitoring Report Summary Data

Ambient monitoring point/Coastal Monitoring Code	Irish Grid Reference	Bathing Water
TW36004126SN4002	133127,152389	No

Ambient Monitoring Results Summary

Monitoring point	Date	Ammonia NH3-N mg/l
WDLW 17 d/s Askeaton STP	5-Jan-2021	0.04
WDLW 17 d/s Askeaton STP	2-Mar-2021	< 0.04
WDLW 17 d/s Askeaton STP	4-May-2021	0.46
WDLW 17 d/s Askeaton STP	27-July-2021	0.022
WDLW 17 d/s Askeaton STP	7-Sep-2021	0.062
WDLW 17 d/s Askeaton STP	16-Nov-2021	< 0.04

Bathing Water Results Summary (if relevant)

Monitoring point	Date	Parameter 1
		Results

Askeaton WWTP

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code
Upstream Monitoring Point	133883, 150742	RS24D021450
Downstream Monitoring Point	133127,152389	TW36004126SN4022
<i>Difference</i>		
EQS		
% of EQS		

Designations				
Drinking Water	FWPM	Shellfish	WFD Status	
No	No	No	Moderate	

BOD mg/l	DIN mg/l	Dissolved Oxygen %	Nitrate NO3-N mg/l	pH
< 2		93.9		8.1
< 2		84		8.1
< 2		105		8
< 1	0.149	94.7	0.123	8
< 1	0.177	80	0.108	8
< 2		104.5		8.2

Parameter 2	Parameter 3			
Results	Results			

Receiving Waters Designation (Yes/No)				Yes
Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status
				Moderate
No	No	No	No	Moderate

Temperature	Ortho-P PO4-P mg/l	TON mg/l
3.5	0.043	2.32
6.6	0.09	2.08
11.3	0.016	< 1
19.8	0.032	
17.4	0.019	
13.3	0.074	1.55

0.004
0.007

	Parameter 4	etc
	Results	Results

Mean (mg/l)		
cBOD	o-Phosphate (as P)	Ammonia (as N)
1.383	0.066	0.044
1.000	0.046	0.104
-0.383	-0.020	0.060
2.200	0.045	0.065
-17.409%	-44.444%	92.308%