Annual Environmental Report

2019

Askeaton

D0315-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 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.

None

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 INCLUDED IN AER

Assessment / Report	Included in AER
There are no Licence Specific Reports included in the 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	2	45.9	42.34
COD-Cr mg/l	6	484	283.43
Total Phosphorus (as P) mg/l	2	6.64	6.62
Suspended Solids mg/l	6	228	98.87
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	212	93.3
Hydraulic Capacity	N/A	485	291

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	6	5	2	228.69	Fail
Suspended Solids mg/l	35	87.5	N/A	6	6	5	108	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	6	6	5	92.83	Fail
Ammonia-Total (as N) mg/l	15	18	N/A	6	4	4	23.36	Fail
pH pH units	9	9	N/A	6	N/A	N/A	7.43	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	6	6	6	4	Fail
Total Nitrogen mg/l	N/A	N/A	N/A	2	N/A	N/A	39.27	
Dissolved Inorganic Nitrogen (as N) mg/l	N/A	N/A	N/A	6	N/A	N/A	22.47	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	6	N/A	N/A	0.11	

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	2	N/A	N/A	6.17	

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

Cause of Exceedance(s):

The plant has inadequate infrastructure to meet the ELVs.

Significance of Results:

The WWTP is non compliant with the ELVs set in the WWDL. 5 parameter failed 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 Status
There is no Ambient data included in the AER.							

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 does not meet the required EQS. 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.

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: The River Deel is a high nutrient river.

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)
COD	24346	19644	19
TN	3331	3089	7.25
SS	8493	9277	-9.23
TP	521	485	6.76
cBOD	8014	7974	0.51

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
Current Hydraulic Loading - annual max (m^3/day)	485
Average Hydraulic loading to the Treatment Plant (m^3/day)	291
Organic Capacity (PE) - As Constructed	550
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1430
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 is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2019.			

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)
Spillage	Network Infrastructure	1	No	Yes
Abatement Equipment offline	Inadequate Infrastructure	1	No	No
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Network Infrastructure	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	4
Number of Incidents reported to the EPA via EDEN in 2019	4
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	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW-3	134096, 150295	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW-2	134014, 150293	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW5	134070, 150500	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored

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?	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?	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 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	Yes	At Planning Stage	31/12/2028	
D0315-SIP:02	New waste water treatment plant and ancillary works	C	01/01/2014	Yes	At Planning Stage	31/12/2028	
D0315-SIP:03	SW-1 to be discontinued when discharge from SW4 commences	A	31/12/2020	No	At Planning Stage	31/12/2028	

A summary of the status of any improvements identified by under Condition 5.2 is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
There are no Improvements Programme for this Agglomeration.				

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 Table.

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 list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of 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
Is there a need to advise the EPA for consideration of a Technical Amendment / Review of the licence?	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	No
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	Yes

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

Signed: Date: 08/04/2020

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

River Deel Upstream Askeaton Outfall.

Location						Parameter						
Station	Station Reference	Station Easting	Station Northing	Sample Reference	Sample Date	Ammonia NH3-N	Biological Oxygen Demand	Dissolved Oxygen % Saturation	Ortho-Phosphate PO4-P	pH	Temperature	Total Nitrogen N
						mg/l	mg/l	% O2	mg/l	pH units	Degrees C	mg/l
Askeaton Br W3	RS24D021400	134065	150345	19370040	8-Jan-2019	0.02	1	109	0.057	8.3	8.9	
Askeaton Br W3	RS24D021400	134065	150345	19370424	5-Feb-2019	0.02	1	104	0.054	8.1	7.2	
Askeaton Br W3	RS24D021400	134065	150345	19371224	2-Apr-2019	0.02	1	119	0.033	8.2	8.3	
Askeaton Br W3	RS24D021400	134065	150345	19371954	4-June-2019	0.2	4.33	98	0.009	8	11.8	
Askeaton Br W3	RS24D021400	134065	150345	19372650	6-Aug-2019	0.02	1	74	0.113	8.5	17.1	
Askeaton Br W3	RS24D021400	134065	150345	19373845	5-Nov-2019	0.02	1	83	0.09	8	9.5	
			EQS Std	individual value						6-9		
			EQS Std	good status mean		≤0.065	≤1.5		≤0.035	n/a	n/a	n/a
			EQS Std	good status 95%ile		≤0.14	≤2.6	>80, <120	≤0.075	n/a	n/a	n/a
				mean		0.050	1.000	100.800	0.059	8.183	10.467	#DIV/0!
				95%ile		0.155	3.498	117.000	0.107	8.450	15.775	#NUM!
				mean compliance		yes	yes		no	yes		
				95%ile compliance		no	no	yes	no	yes	--	--

half of level of detection for statistical purposes

exceeds Surface Waters Regulations good status

Note: Individual results which exceed the good status mean are highlighted in red

Deel Estuary downstream Askeaton Outfall.

Location						Parameter						
Station	Station Reference	Station Easting	Station Northing	Sample Reference	Sample Date	Ammonia NH3-N	Biological Oxygen Demand	Dissolved Oxygen % Saturation	Ortho-Phosphate PO4-P	pH	Temperature	Total Nitrogen N
						mg/l	mg/l	% O2	mg/l	pH units	Degrees C	mg/l
WDLW 17 d/s Askeaton STP	TW36004126SN400	133127	152389	19370044	8-Jan-2019	0.02	1	88.5	0.045	8.1	8.6	
WDLW 17 d/s Askeaton STP	TW36004126SN400	133127	152389	19370428	5-Feb-2019	0.08	1	101	0.042	7.9	6.6	
WDLW 17 d/s Askeaton STP	TW36004126SN400	133127	152389	19371228	2-Apr-2019	0.02	1	121	0.029	8.1	8.1	
WDLW 17 d/s Askeaton STP	TW36004126SN400	133127	152389	19371958	4-June-2019	0.59	1	86	0.015	8	13.6	
WDLW 17 d/s Askeaton STP	TW36004126SN400	133127	152389	19372654	6-Aug-2019	0.54	1	104	0.04	7.2	17.1	
WDLW 17 d/s Askeaton STP	TW36004126SN400	133127	152389	19373849	5-Nov-2019	0.02	1	92	0.086	8	9.4	
			EQS Std	individual value						6-9	n/a	
			EQS Std	good status mean		≤0.065	≤1.5		≤0.035	n/a	n/a	n/a
			EQS Std	good status 95%ile		≤0.14	≤2.6	>80, <120	≤0.075	n/a		n/a
				mean		0.212	1.000	94.750	0.043	7.883		#DIV/0!
				95%ile		0.578	1.000	100.375	0.076	8.100		#NUM!
				mean compliance		no	yes	yes	no	yes	--	
				95%ile compliance		no	yes	yes	no	yes	--	--

half of level of detection for statistical purposes

exceeds Surface Waters Regulations good status

Note: Individual results which exceed the good status mean are highlighted in red

			Receiving Waters Designation (Yes/No)				yes	Mean (mg/l)		
Ambient Monitoring Point from WWDL (or as agreed with EPA)	**Irish National Grid Reference (Easting, Northing)**	**EPA Feature Coding Tool code**	**Bathing Water**	**Drinking Water**	**FWPM**	**Shellfish**	**Current WFD Status**	**cBOD**	**o-Phosphate (as P)**	**Ammonia (as N)**
Upstream Monitoring Point	134065, 150345	RS24D021400					Poor	1.000	0.059	0.050
Downstream Monitoring Point	133127, 152127	TW360041265SN400	No	No	No	No	Good	1.000	0.043	0.212
Difference								*0.000*	*-0.016*	*0.162*
EQS								1.500	0.035	0.065
% of EQS								0.000%	-45.714%	249.231%