Annual Environmental Report

2019

Courtown/Gorey

D0046-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0046-01, Courtown/Gorey, in Wexford 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 nor significant changes nor operational improvements in 2019, apart for DAP for Gorey which is currently ongoing .

1.2 TREATMENT SUMMARY

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

- Courtown WWTP with a Plant Capacity PE of 36000, the treatment type is 2 - Secondary treatment

Note: Gorey WWTP ceased operation in 2016 and all loading was ransferred to the upgraded Courtown WWTP.

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
TPEFF3300D0046SW001	Courtown WWTP	Treated	Compliant	N/A

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 COURTOWN WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - COURTOWN 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	13	460	261.77
Total Nitrogen mg/l	13	48.2	26.61
Suspended Solids mg/l	13	520	138.08
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	14	264	99.08
Total Phosphorus (as P) mg/l	13	5.84	3.58
Hydraulic Capacity	N/A	20517	6569.8

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 tretament 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 -

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	13	N/A	N/A	23.42	Pass
Suspended Solids mg/l	35	87.5	N/A	13	N/A	N/A	5.16	Pass
Total Oxidised Nitrogen (as N) mg/l	35	42	N/A	12	N/A	N/A	6.93	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	13	N/A	N/A	1.47	Pass
Temperature °C	25	25	N/A	1	N/A	N/A	7.9	Pass
Ammonia-Total (as N) mg/l	25	30	N/A	13	N/A	N/A	0.17	Pass
pH pH units	9	9	N/A	13	N/A	N/A	7.1	Pass
Visual Inspection Descriptive	N/A	N/A	N/A	14	N/A	N/A	N/A	
Nitrite (as N) mg/l	N/A	N/A	N/A	1	N/A	N/A	0.07	

ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	13	N/A	N/A	1.52	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	13	N/A	N/A	2.1	
Faecal coliforms no./100mls	N/A	N/A	N/A	2	N/A	N/A	957.97	
Total Nitrogen mg/l	N/A	N/A	N/A	13	N/A	N/A	7.74	
E. Coli MPN/100ml	N/A	N/A	N/A	2	N/A	N/A	604.51	
Enterococci (Intestinal) cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	59.83	

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):

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

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
Ambient	322087, 147973	CW33002081SY4002	No	No	No	No	Moderate
Ambient	320251.35, 156046.62	CW33002081SY4003	Yes	No	No	No	Moderate
Ambient	321659, 160082	CW33002081SY4004	No	No	No	No	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 WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.

The 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 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.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - COURTOWN WWTP

2.1.4.1 Treatment Efficiency Report - Courtown 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	67871	19749	71
TP	9128	5364	41
cBOD	275329	3751	99
SS	352174	13172	96
COD	667634	59742	91

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

2.1.4.2 Treatment Capacity Report Summary - Courtown 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.

Courtown WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	23625
DWF to the Treatment Plant (m^3/day)	7875
Current Hydraulic Loading - annual max (m^3/day)	20517
Average Hydraulic loading to the Treatment Plant (m^3/day)	6569.8
Organic Capacity (PE) - As Constructed	36000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	21558
Organic Capacity (PE) - Remaining	14442
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 - COURTOWN 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
1	Blocked Sewer	0	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 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)
There were no reportable incidents in 2019.				

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	0
Number of Incidents reported to the EPA via EDEN in 2019	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	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
SW007	315885, 158546	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW006	320579, 155868	Yes	Low	Meeting	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?	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?	Yes

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
D0046-SIP:04	Discharge to cease: SW003 Riverchapel	A	31/12/2013	Yes	Works Completed		
D0046-SIP:06	Discharge to cease: SW005 Ballinatray	A	31/12/2013	Yes	Works Completed		
D0046-SIP:01	Decommissioning of Gorey WWTP and subsequent conversion of infrastructure to storm water storage	C	31/12/2013	Yes	Works Completed		
D0046-SIP:02	Decommissioning of inlet overflow mechanism and subsequent utilisation of WWTP infrastructure for storm water retention purposes	C	31/12/2013	Yes	Works Completed		
D0046-SIP:03	Discharge to cease: SW002 Gorey WWTP	A	31/12/2013	Yes	Works Completed		

D0046-SIP:05	Discharge to cease: SW004 Paulishaun	A	31/12/2013	Yes	Works Completed		
D0046-SIP:07	Elimination of all unauthorised discharges/surcharges from waste water works	C	31/12/2013	Yes	Works Completed		
D0046-SIP:08	Upgrading of waste water works to convey all WW for treatment to Courtown WWTP	C	31/12/2013	Yes	Works Completed		
D0046-SIP:09	WWTP upgrade and ancillary works	C	31/12/2013	Yes	Works Completed		

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
Priority Substances Assessment	Yes	2014	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2014

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	Yes
List reason e.g. changes to monitoring requirements	Change to Downstream Monitoring point to enable safe access
Have these processes commenced?	No
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: 30/04/2020

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

				BOD, 5 days with Inhibition (Carbonaceous)	Ortho-Phosphate P	pH	Total Nitrogen N	Dissolved Inorganic Nitrogen DIN	Temperature	Dissolved Oxygen	Visual Inspection	Dissolved Oxygen % Saturation	Faecal Coliforms	E Coli	Enterococci
Station	Station Reference	Sample Referer	Sample Date	mg/l	mg/l	pH units	mg/l	mg/l	Degrees C	mg/l	Descriptive	% Sat.	no./100mls	MPN/100mls	cfu/100mls
Courtown Upstream SW1	CW33002081SY4002	25924-30b	8-Jan-2019								Clear, Some SS				
Courtown Upstream SW1	CW33002081SY4002	25924-30	8-Jan-2019	2	0.04	8.29	0.3		9.4	12.03	Clear, Some SS	105	***2***	***4***	8
Courtown Upstream SW1	CW33002081SY4002	26000-25	4-Feb-2019	2	0.14	7.99	1.4	1	8.6	11.24		96.4			
Courtown Upstream SW1	CW33002081SY4002	26054-41	4-Mar-2019	2	0.08	7.46	0.5		7.2	9.04		103			
Courtown Upstream SW1	CW33002081SY4002	26054-41b	4-Mar-2019								Slight yellow				
Courtown Upstream SW1	CW33002081SY4002	26141-22	9-Apr-2019	4.5	0.02	8.27	0.2	6	9.3	11.3		111	0	0	0
Courtown Upstream SW1	CW33002081SY4002	26259-38	7-May-2019	2	0.02	8.26	0.2	5.1	12	11.13		103.3			
Courtown Upstream SW1	CW33002081SY4002	26259-38b	7-May-2019								Clear, few SS				
Courtown Upstream SW1	CW33002081SY4002	26373-18	12-June-2019	2.3	0.09	8.16	0.3	0.2	11.1	10.68		102.9			
Courtown Upstream SW1	CW33002081SY4002	26373-18b	12-June-2019								Clear, sea water sample				
Courtown Upstream SW1	CW33002081SY4002	26445-38a	3-July-2019						17.9						
Courtown Upstream SW1	CW33002081SY4002	26445-38	3-July-2019	2.22	0.02	8.14	0.2	0.2		8.34		73	0	0	3
Courtown Upstream SW1	CW33002081SY4002	26559-20b	8-Aug-2019								Few SS				
Courtown Upstream SW1	CW33002081SY4002	26559-20	8-Aug-2019	2	0.04	8.35	0.2	0.2	18.2	10.86		114.9			
Courtown Upstream SW1	CW33002081SY4002	26637-33b	3-Sep-2019								Clear				
Courtown Upstream SW1	CW33002081SY4002	26637-33	3-Sep-2019	2.8	0.02	8.21	0.2	0.4	17.9	10.91		114.9			
Courtown Upstream SW1	CW33002081SY4002	26758-22	8-Oct-2019	2	0.02	8.26	0.2	0.2	13.2	10.27	Yellow tint, few ss	103.6	1	***15***	17
Courtown Upstream SW1	CW33002081SY4002	26932-7	21-Nov-2019		0.02		0.8	0.7	8.3	12.19	Brown, few ss	104			
Rosslare Harbour Ambient	CW33002081SY4001	26000-59	5-Feb-2019	2	0.12	7.25	0.4	1	8	10.28		101.7			
				2.347	0.053	8.058	0.408	1.500	11.758	10.689		102.808	0.750	4.750	7.000
Courtown Ambient SW1	CW33002081SY4003	25924-29	8-Jan-2019	2	0.07	8.35	0.2		9.3	12.1	Cloudy, Lots SS	104.9	0	***2***	4
Courtown Ambient SW1	CW33002081SY4003	25924-29b	8-Jan-2019								Cloudy, Lots SS				
Courtown Ambient SW1	CW33002081SY4003	26000-24	4-Feb-2019	2	0.09	7.93	0.5	1	8.3	11.75		99.4			
Courtown Ambient SW1	CW33002081SY4003	26054-40	4-Mar-2019	2.27	0.08	7.19	1.8		7.2			98.1			
Courtown Ambient SW1	CW33002081SY4003	26054-40b	4-Mar-2019								Pale yellow				
Courtown Ambient SW1	CW33002081SY4003	26141-21	9-Apr-2019	2.52	0.02	8.26	0.2	6	9.6	11.2		103	0	0	10
Courtown Ambient SW1	CW33002081SY4003	26259-37	7-May-2019	2.72	0.02	8.19	0.5	4.9	11.9	11.79		108.5			
Courtown Ambient SW1	CW33002081SY4003	26259-37b	7-May-2019								Clear, few SS				
Courtown Ambient SW1	CW33002081SY4003	26373-17b	12-June-2019								Clear, few SS				
Courtown Ambient SW1	CW33002081SY4003	26373-17	12-June-2019	2.21	0.02	8.19	0.2	0.2	10.6	10.72		103.6			
Courtown Ambient SW1	CW33002081SY4003	26445-37b	3-July-2019								Clear				
Courtown Ambient SW1	CW33002081SY4003	26445-37	3-July-2019	2	0.02	8.13	2.1	0.2	17.6	7.96		69	0	0	0
Courtown Ambient SW1	CW33002081SY4003	26559-19b	8-Aug-2019								Few SS				
Courtown Ambient SW1	CW33002081SY4003	26559-19	8-Aug-2019	3	0.06	7.9	0.6	0.2	16.9	9.5		98.2			
Courtown Ambient SW1	CW33002081SY4003	26637-32b	3-Sep-2019								Clear				
Courtown Ambient SW1	CW33002081SY4003	26637-32	3-Sep-2019	3.4	0.02	8.25	0.2	0.4	18	10.16		107.2			
Courtown Ambient SW1	CW33002081SY4003	26758-21	8-Oct-2019	2	0.02	8.31	0.6	0.2	13.4	10.31	Yellow tint, few ss	103.9	1	***23***	13
Courtown Ambient SW1	CW33002081SY4003	26932-6	21-Nov-2019		0.03		3.4	0.2	8.2	12.14	Brown, few ss	103			
				2.412	0.041	8.070	0.936	1.478	11.909	10.763		99.891	0.250	6.250	6.750

				BOD, 5 days with Inhibition (Carbonaceous)	Ortho-Phosphate P	pH	Total Nitrogen N	Dissolved Inorganic Nitrogen DIN	Temperature	Dissolved Oxygen	Visual Inspection	Dissolved Oxygen % Saturation	Faecal Coliforms	E Coli	Enterococci
Station	Station Reference	Sample Referer	Sample Date	mg/l	mg/l	pH units	mg/l	mg/l	Degrees C	mg/l	Descriptive	% Sat.	no./100mls	MPN/100mls	cfu/100mls
Courtown Downstream SW1	CW33002081SY4004	25924-31b	8-Jan-2019								Cloudy, Lots SS				
Courtown Downstream SW1	CW33002081SY4004	25924--31	8-Jan-2019	2	0.04		0.2		8.9	12.5	Cloudy, Lots SS	107.9	0	0	7
Courtown Downstream SW1	CW33002081SY4004	26000-26	4-Feb-2019	2	0.04	7.93	0.4	1	7.9	12.01		101.3			
Courtown Downstream SW1	CW33002081SY4004	26054-42	4-Mar-2019	2	0.02	7.74	0.2		7.39	9.27		104			
Courtown Downstream SW1	CW33002081SY4004	26054-42b	4-Mar-2019								Clear				
Courtown Downstream SW1	CW33002081SY4004	26141-23	9-Apr-2019	2.25	0.02	8.19	0.2	5.8	9.8	11.1		110	0	0	0
Courtown Downstream SW1	CW33002081SY4004	26259-39	7-May-2019	4.67	0.02	8.34	0.2	4.7	12.3	12.13		113.2			
Courtown Downstream SW1	CW33002081SY4004	26259-39b	7-May-2019								Clean, lots of SS				
Courtown Downstream SW1	CW33002081SY4004	26373-19	12-June-2019	2.45	0.04	8.2	0.2	0.2	11	10.68		103.1			
Courtown Downstream SW1	CW33002081SY4004	26373-19b	12-June-2019								Sea water sample				
Courtown Downstream SW1	CW33002081SY4004	26445-39	3-July-2019	2	0.02	7.9	1.3	0.2		8.57		75	5	165	> 200
Courtown Downstream SW1	CW33002081SY4004	26445-39a	3-July-2019						17.8						
Courtown Downstream SW1	CW33002081SY4004	26445-38b	3-July-2019								Clear				
Courtown Downstream SW1	CW33002081SY4004	26445-39b	3-July-2019								Clear				
Courtown Downstream SW1	CW33002081SY4004	26559-21	8-Aug-2019	8	0.04	7.95	0.8	0.2	17.9	10.74		100.6			
Courtown Downstream SW1	CW33002081SY4004	26559-21b	8-Aug-2019								Few SS				
Courtown Downstream SW1	CW33002081SY4004	26637-34b	3-Sep-2019								Clear				
Courtown Downstream SW1	CW33002081SY4004	26637-34	3-Sep-2019	2.5	0.03	8.3	0.2	0.3	17.2	9.62		100			
Courtown Downstream SW1	CW33002081SY4004	26758-23	8-Oct-2019	2	0.02	8.27	0.2	0.2	13.3	10.4	Yellow tint, few ss, turbid	103.5	0	*4*	35
Courtown Downstream SW1	CW33002081SY4004	26932-8	21-Nov-2019		0.04		2.6	0.4	8.3	12.25	Brown, few ss	106			
				2.987	0.030	8.091	0.591	1.444	11.981	10.843		102.236	1.250	42.250	14.000