

# Annual Environmental Report

2018



Wicklow

D0012-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0012-01, Wicklow, in Wicklow in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports are included as an appendix to the AER as follows:

## 1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER
<b>There is no Licence Specific Reports included in the AER.</b>	

## 1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Wicklow WWTP with a Plant Capacity PE of 34000. The treatment process includes the following:

### 1.2.1 Wicklow WWTP

Treatment type	Yes / No	Details
<b>Preliminary Treatment</b>	No	
<b>Primary Treatment</b>	No	
<b>Secondary Treatment</b>	Yes	
<b>Nutrient Removal</b>	No	
<b>Tertiary Treatment</b>	No	

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 2.2 Discharges from the agglomeration.

### 1.3 ELV Overview

#### 1.3.1 Wicklow WWTP

Compliance Status	
Were all parameters compliant for Wicklow WWTP treatment plant	Yes
Where non compliant see Table 2.2.1 for details of parameters	

### 1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
Wicklow WWTP	Dried Sludge	9.95	Weight (Tonnes)	90	Land Spread
Wicklow WWTP	Cake Sludge	252.46	Weight (Tonnes)	17.4	H&L Environmental, Moyne, Derryville, Thurles, Co. Tipperary (Anaerobic Digestion) (Land Spread)
Wicklow WWTP	Cake Sludge	1161.88	Weight (Tonnes)	18.5	M&T Plant Hire, Composting, Ballyeden, Davidstown, Enniscorthy, Co. Wexford (Composting).
Wicklow WWTP	Cake Sludge	87.7	Weight (Tonnes)	18	John Owens Gaulsmoystown, Knockdrin, Mullingar, Co. Westmeath (Lime Stabilisation)

#### Annual Statement of Measures

There were no major capital or operational changes undertaken.

## 2 MONITORING REPORTS SUMMARY

### 2.1 Summary report on monthly influent monitoring

A summary of influent monitoring for the treatment plant is presented in below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

#### 2.1.1 Influent Monitoring Summary - Wicklow WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
<b>Total Nitrogen</b>	12	46	18.57
<b>Total Phosphorus (as P)</b>	12	9.08	3.64
<b>COD-Cr</b>	12	614	236.4
<b>BOD, 5 days with Inhibition (Carbonaceous BOD)</b>	12	345	105.15
<b>Suspended Solids</b>	12	388	106.66
<b>Hydraulic Capacity</b>		19316	7660.92

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5 if applicable.

#### Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2.

## 2.2 Discharges from the agglomeration

### 2.2.1 Effluent Monitoring Summary - Wicklow WWTP

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included <sup>Note 1</sup>	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)
<b>Enterococci (Intestinal)</b>	0	0	0	5	0	0	39.74	N/A
<b>Conductivity 20 C</b>	0	0	0	12	0	0	2625.6	N/A
<b>Temperature</b>	25	0	0	3	0	0	4.48	Pass
<b>BOD, 5 days with Inhibition (Carbonaceous BOD)</b>	25	50	0	12	0	0	2.66	Pass
<b>Total Oxidised Nitrogen (as N)</b>	20	24	0	12	0	0	4.12	Pass
<b>Ammonia-Total (as N)</b>	10	12	0	12	1	0	1.2	Pass
<b>Nitrate (as N)</b>	0	0	0	12	0	0	5.88	N/A
<b>COD-Cr</b>	125	250	0	12	0	0	46.55	Pass
<b>E. Coli</b>	0	0	0	5	0	0	2964.48	N/A
<b>Suspended Solids</b>	35	87.5	0	12	0	0	7.97	Pass

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included <sup>Note 1</sup>	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)
<b>Total Nitrogen</b>	0	0	0	12	0	0	7.82	N/A
<b>Dissolved Inorganic Nitrogen (as N)</b>	0	0	0	12	0	0	7.31	N/A
<b>ortho-Phosphate (as P) - unspecified</b>	0	0	0	3	0	0	0.77	N/A
<b>pH</b>	6 to 9	0	0	12	0	0	6.8	Pass
<b>Total Phosphorus (as P)</b>	0	0	0	12	0	0	1.89	N/A
<b>Nitrite (as N)</b>	0	0	0	12	0	0	0.37	N/A

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.

### 2.3 Ambient monitoring summary

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.



### 2.3.1 Ambient Monitoring Report Summary - Wicklow WWTP

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	331534, 194326	TPEFF3400D0012SW001	Yes	No	No	No	High

### 2.3.2 Ambient Monitoring Parameter Summary - Wicklow WWTP

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 discharge from the wastewater treatment plant does not have an observable negative impact on the water quality.

The discharge from the WWTP has no observable negative impact on the Water Framework Directive status.

Taking on board the 2018 ambient monitoring data and a review of the 2018 beaches.ie data for Silver Strand it is not considered that the wastewater treatment plant is impacting on the bathing water designations nearby.

### 3 OPERATIONAL REPORTS SUMMARY

#### 3.1 Treatment Efficiency Report

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:

##### 3.1.1 Treatment Efficiency Report Summary - Wicklow WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
<b>TN</b>	49325.83	20804.6	57.82
<b>SS</b>	283263.66	21206.83	92.51
<b>TP</b>	9655.04	5023.05	47.97
<b>cBOD</b>	279256.69	7064.14	97.47
<b>COD</b>	627828.17	123809.37	80.28

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

### 3.2 Treatment Capacity Report Summary

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.

Wicklow WWTP	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	22950
DWF to the Treatment Plant (m <sup>3</sup> /day)	7650
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	19316
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	7660.92
Organic Capacity (PE) - As Constructed	34000
Organic Capacity (PE) - Collected Load (peak week)	18344
Organic Capacity (PE) - Remaining	15656
Will the capacity be exceeded in the next three years? (Yes/No)	No

### 3.3 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
5	Blocked Sewer	0	5

### 3.4 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.

#### 3.4.1 Summary of Incidents

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

#### 3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	1
Number of Incidents reported to the EPA via EDEN in 2018	1
Explanation of any discrepancies between the two numbers above	N/A

### 3.5 Sludge / Other inputs to the 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)
<b>Domestic /Septic Tank Sludge</b>	2254	Weight (Tonnes)	27	0.08	No	Yes	Yes

## 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:

**No Appendix Included.**

#### 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 2018 (No. of events)	Total volume discharged in 2018 (m <sup>3</sup> )	Monitoring Status
SW002	331753, 194406	Yes	Low	Meeting	30	191,087	Monitored
SW003	331326, 194326	Yes	Low	Meeting	18	14,873	Monitored
SW004	330540, 194573	Yes	Low	Meeting	4	2,169	Monitored
SW5	331500, 194150	Yes	Low	Meeting			Not Monitored
SW6	331921, 193940	Yes	Low	Meeting			Not Monitored

#### 4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m <sup>3</sup> )?	208,129
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	No
The SWO Assessment included the requirements of relevant of WWDL schedules?	No
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)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Pumping stations at Ashford and Rathnew to improve primary and secondary discharges	C	30/03/2010	Yes	Works Completed		
Pumping stations at Ashford and Rathnew to improve primary and secondary discharges	C	30/03/2010	Yes	Works Completed		

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Secondary discharge from SW2 (outlet from the Murrough storm water holding tank) to be reclassified as a SWO	A	31/10/2009	Yes	Works Completed		
Secondary discharge from SW3 Ashford to be reclassified as SWO	A	30/03/2010	Yes	Works Completed		
Secondary discharge from SW4 Rathnew to be reclassified as SWO	A	30/03/2010	Yes	Works Completed		
WWTP at Knockrobin and ancillary works to improve primary & secondary discharges	C	31/10/2009	Yes	Works Completed		
WWTP at Knockrobin and ancillary works to improve primary & secondary discharges	C	31/10/2009	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	Improvement Source	Expected Completion Date	Comments
<b>There are no Improvements Programme for this Agglomeration.</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 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	2011	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?	No
List reason e.g. additional SWO identified	N/A
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	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	N/A

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

Date: 19/03/2019

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,

Eleanor Roche

Acting Head of Environmental Regulation.

## 7 APPENDIX

### Appendix

#### Appendix 7.1 - Ambient Monitoring Summary

## Ambient Monitoring Data

### Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status
Within 200m radius of SW1 (Irish Sea)	331534E 194326N	IE EA 100 0000	SW001 is 1,250 metres offshore of a Bathing Area.  Silver Strand is a designated Bathing Water and is located approx. 6km south of SW001.	N	N	N	High

### Significance of Results

- )] The WWTP was compliant with the ELV's set in the wastewater discharge licence.
- )] The discharge from the wastewater treatment plant does not have an observable negative 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.
- )] Taking on board the 2018 ambient monitoring data and a review of the 2018 beaches.ie data for Silver Strand it is not considered that the wastewater treatment plant is impacting on the bathing water designations nearby

### 2018 Marine Ambient Monitoring Summary

Date	pH	cBOD (mg/l)	Total Nitrogen (mg/l)	Dissolved Oxygen (mg/l)	Dissolved Oxygen (% sat.)	E. Coli (MPN/100ml)	Enterococci (Intestinal) (CFU/100ml)
19/07/2018	8.34	1	1.3	6.63	76.4	129	0

### Bathing Water Results 2018

#### Silver Strand

Silver Strand is classified as achieving Excellent Water Quality in 2018 based on the assessment of bacteriological results for the period 2015 to 2018. Silver Strand had a Good Water Quality rating for three consecutive years 2015 to 2017.