

# Annual Environmental Report

2018



Kilmeague

D0233-01

## **TABLE OF CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER**

- 1.1 LICENCE SPECIFIC REPORTING INCLUDED IN AER
- 1.2 TREATMENT TYPE
  - 1.2.1 KILMEAGUE WWTP
- 1.3 ELV OVERVIEW
  - 1.3.1 KILMEAGUE WWTP
- 1.4 SLUDGE REMOVAL

### **2 MONITORING REPORTS SUMMARY**

- 2.1 SUMMARY REPORT ON MONTHLY INFLUENT MONITORING
  - 2.1.1 INFLUENT MONITORING SUMMARY - KILMEAGUE WWTP
- 2.2 DISCHARGES FROM THE AGGLOMERATION
  - 2.2.1 EFFLUENT MONITORING SUMMARY - KILMEAGUE WWTP
- 2.3 AMBIENT MONITORING SUMMARY
  - 2.3.1 AMBIENT MONITORING REPORT SUMMARY - KILMEAGUE WWTP
  - 2.3.2 AMBIENT MONITORING PARAMETER MEAN (MG/L) - KILMEAGUE WWTP

### **3 OPERATIONAL REPORTS SUMMARY**

- 3.1 TREATMENT EFFICIENCY REPORT
  - 3.1.1 TREATMENT EFFICIENCY REPORT SUMMARY - KILMEAGUE WWTP
- 3.2 TREATMENT CAPACITY REPORT SUMMARY
- 3.3 COMPLAINTS SUMMARY
- 3.4 REPORTED INCIDENTS SUMMARY
  - 3.4.1 SUMMARY OF INCIDENTS
  - 3.4.2 SUMMARY OF OVERALL INCIDENTS
- 3.5 SLUDGE / OTHER INPUTS TO THE WWTP

### **4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS**

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
  - 4.1.1 SWO IDENTIFICATION
  - 4.1.2 INSPECTION SUMMARY REPORT
- 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS

- 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY
- 4.2.2 IMPROVEMENT PROGRAMME SUMMARY
- 4.2.3 SEWER INTEGRITY RISK ASSESSMENT SUMMARY

**5 LICENCE SPECIFIC REPORTS**

**6 CERTIFICATION AND SIGN OFF**

- 6.1 SUMMARY OF AER CONTENTS
- 6.2 DECLARATION BY IRISH WATER

**7 APPENDIX**

- 7.1 AMBIENT MONITORING SUMMARY

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0233-01, Kilmeague, in Kildare 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 Kilmeague WWTP with a Plant Capacity PE of 700. The treatment process includes the following:

### 1.2.1 Kilmeague WWTP

Treatment type	Yes / No	Details
<b>Preliminary Treatment</b>	No	
<b>Primary Treatment</b>	No	
<b>Secondary Treatment</b>	Yes	2 No. SBRs
<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 Kilmeague WWTP

Compliance Status	
Were all parameters compliant for Kilmeague 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
Kilmeague WWTP	Liquid Sludge	1583.56	Weight (Tonnes)	2.5	D0002 Osberstown WWTP

#### Annual Statement of Measures

Minor plant upgrade project started on the 01/10/18. Upgrade works are to be completed by end of Q2 2019. Works will provide a combined SBR balance tank and storm water holding tank, additional aeration, sludge wasting control and miscellaneous site works which will bring capacity of WWTW to 1,400 PE.

## 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 - Kilmeague WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
<b>Total Phosphorus (as P) mg/l</b>	11	8.9	6.29
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	12	286	204.34
<b>Suspended Solids mg/l</b>	12	395	213.96
<b>COD-Cr mg/l</b>	12	890	490.05
<b>Total Nitrogen mg/l</b>	11	58.4	42.88
<b>Hydraulic Capacity</b>		575	148

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 greater than the peak Treatment Plant Capacity as detailed further in Section 3.2. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

## 2.2 Discharges from the agglomeration

### 2.2.1 Effluent Monitoring Summary - Kilmeague 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)
Total Nitrogen mg/l	0	0	0	11	0	0	13.8	N/A
Total Phosphorus (as P) mg/l	0	0	0	11	0	0	2.27	N/A
Ammonia-Total (as N) mg/l	0	0	0	11	0	0	9.55	N/A
True Colour PtCo Units	0	0	0	11	0	0	19.59	N/A
ortho-Phosphate (as P) - unspecified mg/l	0	0	0	12	0	0	1.63	N/A
Fats, Oils & Greases mg/l	0	0	0	1	0	0	0.5	N/A
COD-Cr mg/l	0	0	0	12	0	0	50.75	N/A
pH pH units	6 to 9	0	0	12	0	0	7.38	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	10	20	0	12	0	0	3.19	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>Suspended Solids mg/l</b>	20	50	0	12	0	0	9.33	Pass

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 - Kilmeague 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
<b>Downstream</b>	284236, 219445	TPEFF1400D0233SW001	No	No	No	No	Good

There is no upstream ambient monitoring for Kilmeague as the effluent discharges to a drainage ditch which has limited inflow upstream of the discharge point.

### 2.3.2 Ambient Monitoring Parameter Summary - Kilmeague 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 ambient monitoring results did not meet the required EQS. Where the ambient monitoring results did not meet an EQS this relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on the effluent results, the discharge from the WWTP may be having an observable impact on the water quality in terms of Ortho-P and Total Ammonia.

The WWTP was compliant with its BOD ELV in 2018 and therefore it is not considered that the discharge is contributing to an observable impact on the d/s water quality in terms of BOD.

Other potential causes of deterioration in water quality relevant to this area are unknown.

The discharge from the WWTP does not have an observable negative impact on the Water Framework Directive status.

### 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 - Kilmeague WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
<b>COD</b>	24698.94	2965.35	87.99
<b>SS</b>	10783.8	545.01	94.95
<b>TP</b>	302.01	128.73	57.37
<b>TN</b>	2058.78	861.66	58.15
<b>cBOD</b>	10298.72	186.36	98.19

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.

Kilmeague WWTP	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	483
DWF to the Treatment Plant (m <sup>3</sup> /day)	161
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	575
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	148
Organic Capacity (PE) - As Constructed	700
Organic Capacity (PE) - Collected Load (peak week)	1293
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

### 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
There is no Complaint data included in the AER.			

### 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
Uncontrolled release	EO caused by ragging or blocking	1	No	No
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	No

#### 3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	3
Number of Incidents reported to the EPA via EDEN in 2018	3
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>There is no Sludge and Other Input data for the Treatment Plant included in the AER.</b>							

## 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	277490, 222282	Yes	High	Not 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> )?	Not Monitored
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?	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
Manhole at entrance to WWTP to be discontinued or converted to SWO	A	30/06/2019	No	Work ongoing on-site		
Relocate the primary discharge point as agreed in Condition 4.18	C	31/12/2014	Yes	At Planning Stage		
The Primary Discharge Point (SW1-P)	A	31/12/2014	Yes	Work ongoing on-site		
Upgrade the WWTP to provide adequate hydraulic and biological treatment capacity as agreed in Condition 4.18	C	31/12/2014	Yes	Work ongoing on-site	30/06/2019	
Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoECLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	C	31/12/2013	Yes	Work ongoing on-site		

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
<b>There is no Licence Specific Report Required in this AER Annual Review.</b>				

## 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	Relocation of SW1-P and SW002 discharge locations
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	Yes
List reason e.g. changes to monitoring requirements	New SW002 location
Have these processes commenced?	Yes
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

## Kilmeague 2018 Ambient Monitoring Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)				Current WFD Status
			Bathing Water	Drinking Water	FWPM	Shellfish	
Upstream Monitoring Point	N/A	N/A					N/A
Downstream Monitoring Point	284236, 219445	RS09L011050	No	No	No	No	Good

**Note:** There is no Upstream ambient monitoring for Kilmeague as the effluent discharges to a drainage ditch which has limited inflow upstream of the discharge point.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Mean (mg/l)		
	cBOD	o-Phosphate (as P)	Ammonia (as N)
Upstream Monitoring Point	N/A	N/A	N/A
Downstream Monitoring Point	2.700	1.150	2.727
EQS	2.600	0.075	0.140

## Kilmeague Ambient Monitoring Data

Downstream Results								
Date		Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	Total N (mg/l)	D.O (% Sat)	D.O (mg/l)	pH (mg/l)
9-Jan-2018	U/S	2.700	0.86	3.0	6.3		8.00	7.50
5-Feb-2018	U/S	1.400	0.48	2.0	8.7		8.70	7.53
21-Mar-2018	U/S	0.600	0.15	4.0	1.4		11.50	7.16
10-Apr-2018	U/S	1.300	0.21	3.0	4.6		10.20	7.29
12-June-2018	U/S	1.200	0.8	3.0	1.9		10.60	7.20
2-July-2018	U/S	1.200	1.22	4.0	3.2		8.10	7.32
24-July-2018	U/S					93.5	7.70	7.49
8-Aug-2018	U/S	1.300	1.27	3.0	4		7.60	7.39
20-Aug-2018	U/S					85.2	7.50	7.25
7-Sep-2018	U/S	12.300	2.5	2.0	17.4	92.1	7.67	7.37
1-Oct-2018	U/S	1.700	1.43	2.0	3.9		8.28	7.29
5-Nov-2018	U/S	2.100	2.33	1.0	8.6		8.22	7.30
19-Dec-2018	U/S	4.200	1.4		7.1		5.60	7.17
<b>Mean</b>		<b>2.727</b>	<b>1.150</b>	<b>2.7</b>	<b>6.1</b>	<b>90.3</b>	<b>8.44</b>	<b>7.33</b>
<b>95%ile</b>		<b>8.250</b>	<b>2.415</b>	<b>4.0</b>	<b>13.1</b>	<b>93.4</b>	<b>10.96</b>	<b>7.51</b>