Annual Environmental Report

2018

UISCE ÉIREANN : IRISH WATER

Enniscorthy

D0029-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0029-01, Enniscorthy, 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 TREATMENT SUMMARY

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

- Enniscorthy WWTP with a Plant Capacity PE of 16000. Note works were ongoing in 2018 to upgrade the WWTP to 30,000 PE.
- KILLAGOLEY WWTP with a Plant Capacity PE of 1000. Note this WWTP was removed from service in early November 2018 and loading transferred to the upgraded Enniscorthy WWTP.

Details provided in this report pertain to the pre-upgrade scenario.

The treatment process includes the following:

1.1.1 ENNISCORTHY WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening/Grit Removal
Primary Treatment	No	
Secondary Treatment	Yes	Conventional Activated Sludge
Nutrient Removal	No	
Tertiary Treatment	No	

1.1.2 KILLAGOLEY WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	No	
Primary Treatment	Yes	Settlement
Secondary Treatment	Yes	RBC
Nutrient Removal	No	
Tertiary Treatment	No	

1.2 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
TPEFF3300D0029SW001	Enniscorthy WWTP	Treated	Non-Compliant	Ammonia, Ortho-P
TPEFF3300D0029SW002	KILLAGOLEY WWTP	Treated	Non-Compliant	Total P, Ammonia, BOD

1.3 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
No licence specific reports are included	

2 TREATMENT PLANT PERFORMAND AND IMPACT SUMMARY

2.1 ENNISCORTHY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - ENNISCORTHY 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
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	544	207
Total Nitrogen mg/l	12	58.7	36
COD-Cr mg/l	12	1116	407.25
Total Phosphorus (as P) mg/l	12	13.5	5.27
Suspended Solids mg/l	12	1356	294.95
Hydraulic Capacity	N/A	37556	5777.86

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 - TPEFF3300D0029SW001

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	12	0	0	28.2	Pass
Suspended Solids mg/l	35	87.5	N/A	12	1	0	17.24	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	1	0	8.5	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	4	3	4.53	Fail
Total Phosphorus (as P) mg/l	2	2.4	N/A	12	0	0	0.74	Pass
pH pH units	0	0	N/A	12	0	0	7.29	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	2	1	0.38	Fail

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

WWTP not designed to meet licence ELVs

Significance of Results:

The WWTP is non-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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	29753.8, 139759	RS12S022350	No	No	No	No	Good
Downstream	297813.8, 134567.5	RS12S022500	No	No	No	No	Good

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1**

Significance of Results:

The WWTP discharge was non-compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results meet the required EQS.

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.

Other Potential causes of deterioration in water quality relevant to this area are: Agricultural activities - onsite WWTP, downstream load subject to tidal influence

2.1.4 OPERATIONAL PERFORMANCE SUMMARY

2.1.4.1 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:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
SS	442700.53	25693.47	94.2	
TN	58973.39	28334.22	51.95	
cBOD	339431.67	18829.5	94.45	
COD	631052.91	56691.05	91.02	
TP	8956.68	1866.31	79.16	

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

2.1.4.2 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.

Enniscorthy WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	21600
DWF to the Treatment Plant (m3/day)	3600
Current Hydraulic Loading - annual max (m3/day)	37556

Average Hydraulic loading to the Treatment Plant (m3/day)	5777.86
Organic Capacity (PE) - As Constructed	16000
Organic Capacity (PE) - Collected Load (peak week)	12126
Organic Capacity (PE) - Remaining	3874
Will the capacity be exceeded in the next three years? (Yes/No)	No

2.1.5 SLUDGE / OTHER INPUTS

'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.							

2.1.6 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
Enniscorthy WWTP	Cake Sludge	804.91	Weight (Tonnes)	17.47	Mortorstown Lime stabilisation

2.2 KILLAGOLEY WWTP - TREATED DISCHARGE

2.2.1 INFLUENT MONITORING SUMMARY - KILLAGOLEY 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	12	76.9	40.19
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	1400	275.5
Total Phosphorus (as P) mg/l	12	17.2	6.28
COD-Cr mg/l	12	1640	424.5
Suspended Solids mg/l	12	866	267.05
Hydraulic Capacity	N/A	1949	487.35

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’.

2.2.2 EFFLUENT MONITORING SUMMARY - TPEFF3300D0029SW002

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	11	1	0	57.68	Pass
Suspended Solids mg/l	35	87.5	N/A	11	1	0	25.86	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	11	4	0	19.4	Fail
Temperature °C	25	0	N/A	6	0	0	10.73	Pass
Ammonia-Total (as N) mg/l	10	12	N/A	11	7	6	13.22	Fail
Total Phosphorus (as P) mg/l	2	2.4	N/A	11	7	4	1.9	Fail
pH pH units	6-9	6-9	N/A	11	0	0	7.45	Pass

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

WWTP not designed to meet licence limits

Significance of Results:

The WWTP is non- compliant with the ELV's set in the Wastewater Discharge Licence.

2.2.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE

As per Enniscorthy WWTP.

2.2.4 OPERATIONAL PERFORMANCE SUMMARY

2.2.4.1 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:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
SS	57109.87	5525.46	90.32	
TN	11706.08	6665.43	43.06	
TP	1512.34	436.99	71.11	
cBOD	63371.44	5259.11	91.7	
COD	105807.06	12322.34	88.35	

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

2.2.4.2 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.

KILLAGOLEY WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	1350
DWF to the Treatment Plant (m3/day)	450
Current Hydraulic Loading - annual max (m3/day)	1949
Average Hydraulic loading to the Treatment Plant (m3/day)	487.35
Organic Capacity (PE) - As Constructed	1000
Organic Capacity (PE) - Collected Load (peak week)	1444
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	No

2.2.5 SLUDGE / OTHER INPUTS

'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.							

2.2.6 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
KILLAGOLEY WWTP	Liquid Sludge	529.27	Volume (m3)	1.43	Wexford Sludge HUb
KILLAGOLEY WWTP	Liquid Sludge	529.27	Volume (m3)	1.43	Wexford Sludge Hub

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
31	Blocked Sewer	1	30

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)
Non-compliance	WWTP not designed for N removal	5	Yes	No
Non-compliance	WWTP upgrade required to meet ELV	7	Yes	No
Uncontrolled release	EO casued by power failure	1	No	Yes

Uncontrolled release	Other	1	No	Yes
Uncontrolled release	SWO Design not meeting DoEHLG Criteria	7	Yes	No
Uncontrolled release	EO caused by ragging or blocking	1	No	No
Uncontrolled release	SWO Exceptional rainfall	1	No	No
Uncontrolled release	Other	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2018	8
Number of Incidents reported to the EPA via EDEN in 2018	8
Explanation of any discrepancies between the two numbers above	

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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
SW-3	296872, 138944	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
SW-4	295890, 140173	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW-5	295392, 141322	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW-7	297184, 140293	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW-8	297383, 139279	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW-9	297562, 139745	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?	Yes
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
D0029-SIP:01	Decommissioning of secondary WWTP	C	30/06/2015	Yes	Works Complete		
D0029-SIP:02	Discharges from SW10 (Slaney Street discharge) to be discontinued	A	30/06/2015	Yes	Assessment and Planning Stage	09/02/2023	

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
D0029-SIP:03	Discharges from SW2 (Kilagoley secondary treatment plant), to be discontinued	A	30/06/2015	Yes	Works Complete		
D0029-SIP:04	Discharges from SW6 (Templeshannon) to be discontinued	A	30/06/2015	Yes	Assessment and Planning Stage	09/02/2023	
D0029-SIP:05	Discharges from the pumping station at SW3 (St John's), shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Complete		
D0029-SIP:06	Discharges from the pumping station at SW4 (Promenade) shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Complete		
D0029-SIP:07	Discharges from the pumping station at SW5 (Spring Valley), shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Complete		
D0029-SIP:08	Discharges from the pumping station at SW7 (Island St), shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Assessment and Planning Stage	09/02/2023	

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
D0029-SIP:09	Discharges from the pumping station at SW8 (Milehouse) shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Assessment and Planning Stage	09/02/2023	
D0029-SIP:10	Discharges from the pumping station at SW9 (Carrigbruce) shall be upgraded to SWO to conform to requirements of DoEHLG criteria	C	30/06/2015	Yes	Assessment and Planning Stage	09/02/2023	
D0029-SIP:11	Elimination of groundwater infiltration programme	C	30/06/2015	Yes	Assessment and Planning Stage	09/02/2023	
D0029-SIP:12	Installation of storm water holding tanks at WWTP	C	30/06/2015	Yes	Complete		
D0029-SIP:13	Upgrade of network to connect all areas of agglomeration to the works and to convey all waste water for treatment to the St. John's WWTP	C	30/06/2015	Yes	Assessment and Planning Stage	09/02/2023	
D0029-SIP:14	Upgrade of WWTP	C	30/06/2015	Yes	Complete		
D0029-SIP:15	Upgrade of WWWs to connect all areas of agglomeration to the works and to convey all waste water for treatment to St. John's WWTP	C	30/06/2015	Yes	Complete		

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
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	

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	Upgrade works at Enniscorthy WWTP , removal of plant and discharge at Kilagoley and upgrade to storm overflows at Promenade, spring valley and St Johns St
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	
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No

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

Signed: Date: 23/05/2019

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

Station	Enniscorthy Upstream		Station Ref: RS12S022350			Ammonia N	BOD, 5 days with Inhibition (Carbonaceous)	COD Chemical Oxygen Demand	Ortho-Phosphate P	pH	Suspended Solids	Total Kejdahl Nitrogen	Total Nitrogen N	Total Oxidised Nitrogen N	Total Phosphate P	Temperature	Dissolved Oxygen	Dissolved Oxygen % Saturation	Faecal Coliforms
Entity	Entity Reference	Station Easting	Station Northing	Sample Date	Sample Method	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	Degrees C	mg/l	% Sat.	no./100mls
Slaney River	12S02	297535.8	139759	10-Jan-2018	Grab	0.11	2	29	0.03	7.5	31	1	5.7	4.94	0.19	6.6	11.6	105	
Slaney River	12S02	297535.8	139759	21-Feb-2018	Grab	0.08	1	11	0.02	7.8	5	1.2	6.9	5.68	0.1	7.2	11.71	94.6	
Slaney River	12S02	297535.8	139759	28-Mar-2018	Grab	0.07	2	5	0.03	7.7	5	1	6.4	5.45	0.01	8.6	11.46	90.5	
Slaney River	12S02	297535.8	139759	25-Apr-2018	Grab	0.03	1	8	0.02	7.8	5	1.2	6.4	5.2	0.11	10.5	11.15	95.1	
Slaney River	12S02	297535.8	139759	23-May-2018	Grab	0.02	2	11	0.02	8.5	6	1	5	4.81	0.1	14.9	10.81	88.9	
Slaney River	12S02	297535.8	139759	13-June-2018	Grab	0.29	2	12	0.02	8.3	5	4.3	5.2	0.95	0.1	17	10.24	78.7	
Slaney River	12S02	297535.8	139759	17-July-2018	Grab	0.06	3	16	0.02	7.99	2		3.8		0.12	14.2	9.48		*816*
Slaney River	12S02	297535.8	139759	2-Aug-2018	Grab	0.06	1	26.2	0.02	7.21	1		2.9		0.12	16.2	9.57		
Slaney River	12S02	297535.8	139759	4-Sep-2018	Grab	0.06	2	22	0.02	7.99	6		3.1		0.12	16.4	9.85		
Slaney River	12S02	297535.8	139759	2-Oct-2018	Grab	0.12	1	5	0.05	7.63	3		3.5		0.12	15	7.63	93	
Slaney River	12S02	297535.8	139759	1-Nov-2018	Grab	0.02	1	7	0.08	6.91	3		3.7		0.12	10.1	9.46	95.7	*> 2420*
Slaney River	12S02	297535.8	139759	4-Dec-2018	Grab	0.02	2	13	0.02	7.37	8		5.3		0.12	7.9	12.42	104.4	
				Mean		***0.08***	***1.67***	***13.77***	***0.03***	***7.73***	***6.67***	***1.62***	***4.83***	***4.51***	***0.11***	***12.05***	***10.45***	***93.99***	***816.00***
				95%ile		***0.08***	***1.64***	***12.38***	***0.03***	***7.75***	***4.45***	***1.74***	***4.75***	***4.42***	***0.10***	***12.55***	***10.34***	***92.61***	***816.00***

Station	Enniscorthy Downstream		Station Ref: RS12S022500			Ammonia N	BOD, 5 days with Inhibition (Carbonaceous)	COD Chemical Oxygen Demand	Ortho-Phosphate P	pH	Suspended Solids	Total Kejdahl Nitrogen	Total Nitrogen N	Total Oxidised Nitrogen N	Total Phosphate P	Temperature	Dissolved Oxygen	Dissolved Oxygen % Saturation	Faecal Coliforms
Entity	Entity Reference	Station Easting	Station Northing	Sample Date	Sample Method	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	Degrees C	mg/l	% Sat.	no./100mls
Slaney River	12S02	297813.5	134567.5	10-Jan-2018	Grab	0.13	2	34	0.03	7.6	32	1.2	6.1	4.93	0.16	6.8	11.42	104.5	
Slaney River	12S02	297813.5	134567.5	21-Feb-2018	Grab	0.08	2	14	0.02	7.9	5	1	5.9	5.57	0.1	7.4	11.8	95.81	
Slaney River	12S02	297813.5	134567.5	28-Mar-2018	Grab	0.12	2	5	0.02	7.6	5	1	5.8	5.36	0.1	8.6	11.28	89.6	
Slaney River	12S02	297813.5	134567.5	25-Apr-2018	Grab	0.04	2	9	0.03	7.8	5	1	6	5.29	0.1	10.7	11.27	97.6	
Slaney River	12S02	297813.5	134567.5	23-May-2018	Grab	0.08	2	9	0.02	8.2	5	1	5	4.81	0.1	15.1	10.16	85	
Slaney River	12S02	297813.5	134567.5	13-June-2018	Grab	0.04	2	12	0.02	8.4	5	4.5	4.8	0.3	0.1	17.3	10.36	79.7	
Slaney River	12S02	297813.5	134567.5	17-July-2018	Grab	0.15	16		0.02	7.96	4		3.6		0.12	13.8	9.66		488
Slaney River	12S02	297813.5	134567.5	4-Sep-2018	Grab	0.06	1	19	0.02	7.69	2		3.3		0.12	16.1	9.25		
Slaney River	12S02	297813.5	134567.5	2-Oct-2018	Grab	0.1	1	5	0.1	7.64	3		3.6		0.12	12.3	10.75	91.4	
Slaney River	12S02	297813.5	134567.5	1-Nov-2018	Grab	0.11	1	5	0.15	6.95	3		3.7		0.12	10.2	9.31	94.7	> 2420
Slaney River	12S02	297813.5	134567.5	4-Dec-2018	Grab	0.02	2	12	0.07	7.5	8.1		4.5		0.12	7.5	12.52	104.2	
				Mean		***0.08***	***3.00***	***12.40***	***0.05***	***7.75***	***7.01***	***1.62***	***4.75***	***4.38***	***0.11***	***11.44***	***10.71***	***93.61***	***488.00***
				95%ile		***0.08***	***3.10***	***10.00***	***0.05***	***7.76***	***4.51***	***1.70***	***4.62***	***4.27***	***0.11***	***11.90***	***10.64***	***92.25***	***488.00***