

Annual Environmental Report

2018



Downings

D0350-01

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 DOWNINGS WWTP
- 1.3 ELV OVERVIEW
 - 1.3.1 DOWNINGS WWTP
- 1.4 SLUDGE REMOVAL

2 MONITORING REPORTS SUMMARY

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

3 OPERATIONAL REPORTS SUMMARY

- 3.1 TREATMENT EFFICIENCY REPORT
 - 3.1.1 TREATMENT EFFICIENCY REPORT SUMMARY - DOWNINGS 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 D0350-01, Downings, in Donegal 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
There is no Licence Specific Reports included in the AER.	

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant DOWNINGS WWTP with a Plant Capacity PE of 1000. The treatment process includes the following:

1.2.1 DOWNINGS WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening ,Grit removal
Primary Treatment	Yes	125m3 horizontal flow primary settlement tank that discharges directly to coastal waters
Secondary Treatment	No	
Nutrient Removal	No	
Tertiary Treatment	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 DOWNINGS WWTP

Compliance Status	
Were all parameters compliant for DOWNINGS WWTP treatment plant	N/A*
Where noncompliant see table 2.2.1 for details of parameters	

*There are no ELV's specified in the licence.

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
DOWNINGS WWTP	Liquid Sludge	169.5	Weight (Tonnes)	3	Letterkenny WWTW

Annual Statement of Measures

Not applicable.

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 - DOWNINGS WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	1	0.51	0.51
Total Nitrogen mg/l	1	1.87	1.87
COD-Cr mg/l	6	660	172.82
Suspended Solids mg/l	6	161	68.6
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	214	62.7
Hydraulic Capacity	0	1440	1120

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 greater 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 - DOWNINGS WWTP

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included <small>Note 1</small>	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Suspended Solids mg/l	0	0	0	6	0	0	30.43	Pass
Orthophosphate (MRP) filtered (As P) mg/l	0	0	0	1	0	0	0.35	Pass
pH pH units	0	0	0	6	0	0	7.62	Pass
Total Oxidised Nitrogen (as N) mg/l	0	0	0	6	0	0	1.16	Pass
COD-Cr mg/l	0	0	0	6	0	0	74.46	Pass
Ammonia-Total (as N) mg/l	0	0	0	6	0	0	8.09	Pass
Nitrite (as N) mg/l	0	0	0	6	0	0	0.16	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	0	0	0	6	0	0	23.37	Pass

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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Dissolved Inorganic Nitrogen (as N) mg/l	0	0	0	6	0	0	9.25	Pass
Nitrate (as N) mg/l	0	0	0	6	0	0	0.99	Pass
Conductivity 20 C μ S/cm	0	0	0	6	0	0	587.15	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):

Not Applicable

Significance of Results:

There are no 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 - DOWNINGS 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
Downstream	209536, 438307	TPEFF0600D0350SW001	No	No	No	Yes	Unassigned
Downstream	209536, 438307	TPEFF0600D0350SW001	No	No	No	Yes	Unassigned

2.3.2 Ambient Monitoring Parameter Summary - DOWNINGS 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 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.

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 - DOWNINGS WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
COD	56507.72	24347.81	56.91	
TN	982.87			
TP	198.08			
cBOD	20501.56	7643.04	62.72	
SS	22429.98	9949.29	55.64	

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.

DOWNINGS WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	1026

DOWNINGS WWTP	
DWF to the Treatment Plant (m3/day)	342
Current Hydraulic Loading - annual max (m3/day)	1440
Average Hydraulic loading to the Treatment Plant (m3/day)	1120
Organic Capacity (PE) - As Constructed	1000
Organic Capacity (PE) - Collected Load (peak week)	2030
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)
There is no Incident data included in the AER.				

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	0
Number of Incidents reported to the EPA via EDEN in 2018	0
Explanation of any discrepancies between the two numbers above	

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)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

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 (m3)	Monitoring Status
SW002	209578, 438314	Yes	Low	Not Meeting			Not Monitored
SW003	210666, 438618	No	Low	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 (m3)?	
Is each SWO identified as non 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 / charges 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
Upgrade/expansion of the existing primary WWTP to accommodate the maximum loading. The Upgrade works shall include inlet screens followed by at least primary settlement capacity.	C	31/12/2013	Yes	Not Started		
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	Not Started		

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 (e.g. Appendix X).
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	
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	N/A

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

Signed:

Date: 12/03/2019

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

Downings Coastal Water Monitoring Report					Parameter	Dissolved Oxygen	Ammonia N	Chlorophyll	pH	Dissolved Inorganic Nitrogen	Ortho-Phosphate P	Biological Oxygen Demand	Total Nitrogen N	Dissolved Oxygen
Report No:19DL18					Accreditation Status									
2018						**	**	**	**	**	**	**	**	**
Category	Entity	Station	Sample Reference	Sample Date	Units	% Sat.	mg/l	µg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l
Coastal Water Body	Sheephaven Bay	Downings - Point 1	182502423	7-June-2018	-	NT	0.36	< 4	8.2	< 0.7	< 0.02	< 1	0.3	9.9
Coastal Water Body	Sheephaven Bay	Downings - Point 2	182502424	7-June-2018	-	NT	0.37	< 4	8.2	< 0.7	< 0.02	< 1	< 0.2	9.9
Coastal Water Body	Sheephaven Bay	Downings - Point 1	182504077	12-Sep-2018	-	104	< 0.02	< 4	8.45	< 0.23	< 0.02	< 1	< 0.2	NT
Coastal Water Body	Sheephaven Bay	Downings - Point 2	182504078	12-Sep-2018	-	103	< 0.02	< 4	8.51	< 0.23	< 0.02	< 1	< 0.2	NT

** Sub-Contract # DCC Laboratory
 *** Accredited & Sub-Contract
 NT Not Tested

Downings Coastal Monitoring Report(Beach Monitoring)				Parameter	Visual Inspection	Enterococci	E Coli
Report No:19DL57				Accrediation Status		#	#
2018					Descriptive	cfu/100mls	MPN/100mls
Entity	Station	Sample Reference	Sample Date	Units			
Downings							
Downings	Downings - Beach	182501659	22-May-2018	-	Nothing Observed	3	10
Downings	Downings - Beach	182501801	5-June-2018	-	Nothing Observed	16	169
Downings	Downings - Beach	182502170	19-June-2018	-	Nothing Observed	65	74
Downings	Downings - Beach	182502212	26-June-2018	-	Nothing Observed	< 1	< 10
Downings	Downings - Beach	182502330	3-July-2018	-	Nothing Observed	7	< 10
Downings	Downings - Beach	182502523	17-July-2018	-	Nothing Observed	112	161
Downings	Downings - Beach	182502666	24-July-2018	-	Nothing Observed	56	41
Downings	Downings - Beach	182502796	7-Aug-2018	-	Nothing Observed	10	135
Downings	Downings - Beach	182502836	14-Aug-2018	-	Nothing Observed	24	10
Downings	Downings - Beach	182503061	21-Aug-2018	-	Nothing Observed	56	85
Downings	Downings - Beach	182503363	12-Sep-2018	-	Nothing Observed	20	85
Marble Hill							
Marble Hill	Marble Hill Beach.	182501669	22-May-2018		Nothing Observed	< 1	30
Marble Hill	Marble Hill Beach.	182501796	5-June-2018		Nothing Observed	4	< 10
Marble Hill	Marble Hill Beach.	182502160	18-June-2018		Nothing Observed	1	< 10
Marble Hill	Marble Hill Beach.	182502204	25-June-2018		Nothing Observed	2	< 10
Marble Hill	Marble Hill Beach.	182502326	2-July-2018		Nothing Observed	< 1	< 10
Marble Hill	Marble Hill Beach.	182502515	16-July-2018		Nothing Observed	6	< 10
Marble Hill	Marble Hill Beach.	182502659	23-July-2018		Nothing Observed	2	< 10
Marble Hill	Marble Hill Beach.	182502791	6-Aug-2018		Nothing Observed	1	< 10
Marble Hill	Marble Hill Beach.	182502951	13-Aug-2018		Nothing Observed	4	< 10
Marble Hill	Marble Hill Beach.	182503132	27-Aug-2018		Nothing Observed	22	41
Marble Hill	Marble Hill Beach.	182503359	10-Sep-2018		Nothing Observed	15	41

** Sub-Contract # DCC Laboratory
 *** Accredited & Sub-Contract
 NT Not Tested