Annual Environmental Report

2019

Manorcunningham

D0519-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0519-01, Manorcunningham, in Donegal 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 major capital or operational changes undertaken.

1.2 TREATMENT SUMMARY

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

- MANORCUNNINGHAM WWTP with a Plant Capacity PE of 1000, the treatment type is 2 - Secondary treatment

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
TPEFF0600D0519SW001	MANORCUNNINGHAM WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l Total Oxidised Nitrogen (as N) mg/l

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 MANORCUNNINGHAM WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MANORCUNNINGHAM 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	6	373	336.81
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	202	145.25
Suspended Solids mg/l	6	251	162.66
Total Nitrogen mg/l	1	71.6	71.6
Hydraulic Capacity	N/A	1129	275

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 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 - TPEFF0600D0519SW001

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	7	0	0	56.17	Pass
Suspended Solids mg/l	35	87.5	N/A	7	0	0	15.41	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	7	0	0	12.37	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	7	3	1	12.3	Fail
Ammonia-Total (as N) mg/l	10	12	N/A	7	1	1	7.11	Fail
pH pH units	9	9	N/A	7	0	0	7.3	Pass
ortho-Phosphate (as P) - unspecified mg/l	8	9.6	N/A	7	0	0	2.13	Pass
Enterococci (Intestinal) cfu/100ml	N/A	N/A	N/A	6	N/A	N/A	46401.26	

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)
Conductivity 20 C µS/cm	N/A	N/A	N/A	7	N/A	N/A	525.04	
Nitrite (as N) mg/l	N/A	N/A	N/A	7	N/A	N/A	0.81	
Faecal coliforms cfu/100ml	N/A	N/A	N/A	6	N/A	N/A	283071.83	
Nitrate (as N) mg/l	N/A	N/A	N/A	7	N/A	N/A	11.5	
E. Coli MPN/100ml	N/A	N/A	N/A	6	N/A	N/A	638958.54	

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):

Still under investigation.

Significance of Results:

The WWTP is non-compliant with the ELV's as set out in the wastewater discharge licence. The impact of the results on the receiving waters are further assessed in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0600D0519SW001

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
Upstream	223515, 410246	RS39L050660	No	No	No	Yes	Unassigned
Downstream	223304, 411899	RS39L050840	No	No	No	Yes	Unassigned

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD - 5 days (Total) mg/l	RS39L050660	1.625	RS39L050840	1.875	1.5	16.7
Ammonia-Total (as N) mg/l	RS39L050660	0.076	RS39L050840	0.103	0.065	41
ortho-Phosphate (as P) - unspecified mg/l	RS39L050660	0.179	RS39L050840	0.02	0.035	-455.4
Suspended Solids mg/l	RS39L050660	9.75	RS39L050840	24		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Dissolved Oxygen % Saturation	RS39L050660	95.463	RS39L050840	93.75		
pH pH units	RS39L050660	7.5	RS39L050840	7.775		
Nitrate (as N) mg/l	RS39L050660	1.592	RS39L050840			
Faecal coliforms cfu/100ml	RS39L050660	1062.5	RS39L050840	290.5		
COD-Cr mg/l	RS39L050660	22.667	RS39L050840	17.5		
Dissolved Inorganic Nitrogen (as N) mg/l	RS39L050660	1.295	RS39L050840	0.163		
Conductivity 20 C µS/cm	RS39L050660	307	RS39L050840			
Nitrite (as N) mg/l	RS39L050660	0.02	RS39L050840			
Temperature °C	RS39L050660	9.217	RS39L050840	16.5		

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results do not meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results; a deterioration in Ammonia and BOD concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified; however, it is not known if it is caused by the WWTP.

Other causes of deterioration in water quality in the area are: None

The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - MANORCUNNINGHAM WWTP

2.1.4.1 Treatment Efficiency Report - MANORCUNNINGHAM 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)
COD	31250	5020	84
SS	15093	1377	91
TN	8258	N/A	N/A
TP	N/A	N/A	N/A
cBOD	13477	1105	92

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

2.1.4.2 Treatment Capacity Report Summary - MANORCUNNINGHAM 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.

MANORCUNNINGHAM WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	750
DWF to the Treatment Plant (m^3/day)	250
Current Hydraulic Loading - annual max (m^3/day)	1129

Average Hydraulic loading to the Treatment Plant (m^3/day)	275
Organic Capacity (PE) - As Constructed	1000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	772
Organic Capacity (PE) - Remaining	228
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 - MANORCUNNINGHAM 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
There were no relevant environmental complaints in 2019.			

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)
Breach of ELV	WWTP biological sludge issue	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	1
Number of Incidents reported to the EPA via EDEN in 2019	1
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
There are no Storm Water Overflows in this Agglomeration.							

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m^3)?	0
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?	N/A
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

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
There are no Specified Improvement Programmes for this Agglomeration.							

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 Improvement Programmes for this Agglomeration.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

N/A

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.

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	2015	No	
Shellfish Impact Assessment	Yes		No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the 2015 AER.

5.2 SHELLFISH IMPACT ASSESSMENT

The Shellfish Impact Assessment Report has not been included in the AER.

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?	N/A
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.	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	No

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

Signed: Date: 23/04/2020

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

Entity Name	Month	Location	Lab Ref	Date	pH	Temperature	Conductivity @ 20°C	DO	BOD	COD	Suspended Solids	Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Orthophosphate	TON	Dissolved Inorganic Nitrogen DIN	E coli	Faecal Coliforms (E. coli)	Enterococci
Leslie Hill Stream/Corkey River	January	Manor - Upstream	192500248	24-Jan-19	7.6	5.7	279	95.5	<1	NT	<6	0.04	NT	NT	0.06	NT	NT	404	68	183
Leslie Hill Stream/Corkey River	March	Manor - Upstream	192501112	20-Mar-19	7.4	8.9	303	95.9	1	<20	<6	0.039	2.16	<0.015	<0.05	NT	NT	417	240	341
Leslie Hill Stream/Corkey River	April	Manor - Upstream	192502324	11-Apr-19	7.6	NT	NT	94.1	<1	NT	6.6	0.02	NT	NT	<0.02	NT	<0.02	1414	6	19
Leslie Hill Stream/Corkey River	May	Manor - Upstream	192501833	10-May-19	7.5	7.8	252	94.9	2	33	7	0.15	1.56	0.032	0.21	0.242	1.742	471	487	510
Leslie Hill Stream/Corkey River	July	Manor - Upstream	192502900	16-Jul-19	7.4	15.1	419	92.8	3	30	<6	0.154	1.28	0.031	1.03	1.31	1.47	1376	602	1120
Leslie Hill Stream/Corkey River	September	Manor - Upstream	192504080	26-Sep-19	7.5	12	253	102.4	3	43	14	0.057	1.3	0.025	0.09	1.325	1.4	10344	4128	750
Leslie Hill Stream/Corkey River	November	Manor - Upstream	192504855	19-Nov-19	7.2	6.3	337	92.8	<1	<20	<6	0.077	1.52	<0.015	<0.05	1.53	1.61	262	122	20
Leslie Hill Stream/Corkey River	April	Manor - Downstream	192505431	11-Apr-19	7.6	NT	NT	94.1	<1	<20	7	0.02	NT	NT	<0.02	NT	<0.2	1414	6	19
Leslie Hill Stream/Corkey River	May	Manor - Downstream	192505432	06-May-19	7.81	NT	NT	93.6	2	29	28	0.04	NT	NT	0.02	NT	<0.2	>2420	>2420	20
Leslie Hill Stream/Corkey River	September	Manor - Downstream	192505412	03-Sep-19	7.86	16.5	NT	95.7	2.1	40	50.2	0.15	NT	NT	0.04	NT	<0.5	2420	>2420	>200
Leslie Hill Stream/Corkey River	November	Manor - Downstream	192505430	19-Nov-19	7.82	16.5	NT	91.6	2.73	<20	10.6	0.2	NT	NT	<0.02	NT	<0.4	1553	575	130