

Annual Environmental Report

2021



Castledermot

D0236-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0236-01, Castledermot, in Kildare 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 improvements undertaken in 2021 are provided below.

- Diffusers changed in aeration tank 2 to increase oxygen efficiency.
- Aeration tank 1 cleaned and taken out of service (July 2021).
- Modular air control valves fitted to dissolved oxygen manifold to save energy and reduce excessive dissolved oxygen levels in aeration tanks.
- New roof fitted onto storm water holding tank.

1.2 TREATMENT SUMMARY

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

- Castledermot WWTP with a Plant Capacity PE of 2400, the treatment type is 3P - Tertiary P removal.

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
TPEFF1400D0236SW001	Castledermot WWTP	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
Small Stream Risk Score Assessment

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 CASTLEDERMOT WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CASTLEDERMOT 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
pH pH units	11	8.26	7.72
Total Nitrogen mg/l	11	88	43
Ammonia-Total (as N) mg/l	11	66	31
COD-Cr mg/l	11	818	451.89
Suspended Solids mg/l	11	460	180.6
Total Phosphorus (as P) mg/l	10	8.79	5.86
ortho-Phosphate (as P) - unspecified mg/l	11	6.40	3.54
BOD, 5 days with Inhibition (Carbonaceous) mg/l	11	373	140
Hydraulic Capacity	N/A	1829	588

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'. 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.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF1400D0236SW001

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)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	19	Pass
Suspended Solids mg/l	30	75	N/A	12	N/A	N/A	3.32	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	10	20	N/A	12	N/A	N/A	2.46	Pass
pH pH units	6.00	9.00	N/A	12	N/A	N/A	7.21	Pass
Total Phosphorus (as P) mg/l	0.700	0.840	N/A	12	N/A	N/A	0.300	Pass
Ammonia-Total (as N) mg/l	0.600	1.20	N/A	12	2	N/A	0.421	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.300	0.600	N/A	12	N/A	N/A	0.102	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)
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	14	

Notes:

1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

2 – For pH the WWDA specifies a range of pH 6 - 9

Cause of Exceedance(s):

Not applicable

Significance of Results:

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

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE

TPEFF1400D0236SW001

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 Ecological Status
Upstream	277669, 184624	RS14L010120	No	No	No	No	Moderate
Downstream	277507, 184609	RS14L010140	No	No	No	No	Moderate

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 do not meet the required EQS at the upstream and the downstream monitoring locations. 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 concentration downstream of the effluent discharge is noted.

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

As per the 3rd Cycle Draft Barrow Catchment Report (HA 14), the significant pressures on the Lerr_020 waterbody are Agriculture, Urban Runoff and Hydromorphology. The Castledermot WWTP is not listed as a significant pressure in the Cycle 3 report.

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

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - CASTLEDERMOT WWTP

2.1.4.1 Treatment Efficiency Report - Castledermot 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)
TP	1322	66	95
cBOD	30767	539	98
SS	40151	734	98
TN	9618	3173	67
COD	100465	4112	96

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

2.1.4.2 Treatment Capacity Report Summary - Castledermot 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.

Castledermot WWTP	
Peak Hydraulic Capacity (m ³ /day) - As Constructed	1350
DWF to the Treatment Plant (m ³ /day)	540
Current Hydraulic Loading - annual max (m ³ /day)	1829
Average Hydraulic loading to the Treatment Plant (m ³ /day)	588
Organic Capacity (PE) - As Constructed	2400
Organic Capacity (PE) - Collected Load (peak week) ^{Note1}	1792
Organic Capacity (PE) - Remaining	608
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 - CASTLEDERMOT 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 related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2021.			

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)
Uncontrolled release	EO caused by power failure	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	1
Number of Incidents reported to the EPA via EDEN in 2021	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 (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	Total volume discharged in 2021 (m ³)	Monitoring Status
SW-3	277645.933, 184619.898	Yes	Low	Meeting	4611	Monitored

SWO Summary	
How much sewage was discharged via monitored SWOs in the agglomeration in the year (m ³)?	4611
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?	Yes
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 a 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/NAY)	Status of Works	Timeframe for Completing the Work	Comments
D0236-SIP:01	Upgrade of SWO to comply with the criteria outlined in the DoEHLG "Procedures and criteria in relation to storm water overflows, 1995". SW2	C	31/12/2012	Yes	Works Completed		
D0236-SIP:02	Upgrade of SWO to comply with the criteria outlined in the DoEHLG "Procedures and criteria in relation to storm water overflows, 1995". SW3	C	31/12/2012	Yes	Works Completed		

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
D0236-IP:92	Diffusers in aeration tank 2 changed and replaced. Upgrade of dissolved oxygen system to modular control valves to save energy.	Other	31/07/2021	Completed

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 Tables 4.2.1 and 4.2.2.

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 a 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
Priority Substances Assessment	Yes	2011	No
Small Stream Risk Score Assessment	Yes	2017	Yes

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2011.

5.2 SMALL STREAM RISK SCORE ASSESSMENT

The Small Stream Risk Score Assessment Report is included in Appendix 7.2 - Small Stream Risk Score Assessment. A summary of the findings of this report is included below.

Parameter	Value
Condition 5 Improvement Programme Reference	N/A
Does SSRS indicate discharges are posing a pollution risk?	No

Parameter	Value
Downstream SSRS Water Quality Risk	At Risk
SSRS Required?	Yes
Upstream SSRS Water Quality Risk	At Risk
What is Downstream SSRS?	6.4
What is Upstream SSRS?	4.8
Does improvement programme include any procedural and/or infrastructural works?	N/A

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
Has a Technical amendment/licence review application been submitted to the Agency by IW?	No
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	N/A

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

Date: 18/02/2022

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
Appendix 7.2 - Small Stream Risk Score Assessment

Castledermot Ambient Monitoring Summary 2021

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	Mean (mg/l)		
			Bathing Water	Drinking Water	FWPM	Shellfish		cBOD	o-Phosphate (as P)	Ammonia (as N)
Upstream Monitoring Point	277669, 184624	RS14L010120	No	No	No	No	Moderate	1.1300	0.0625	0.0494
Downstream Monitoring Point	277507, 184609	RS14L010140	No	No	No	No	Moderate	1.1273	0.0608	0.1345
<i>Difference</i>								-0.003	-0.002	0.085
EQS								1.500	0.035	0.065
% of EQS								-0.182%	-4.762%	130.897%

Castledermot Ambient Monitoring Summary 2021

		Biological Oxygen Demand	Suspended Solids	COD Chemical Oxygen Demand	Total Ammonia N	Total Phosphorus P	Dissolved Oxygen	Ortho-Phosphate P	pH	Total Nitrogen N
Station	Sample Date	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l
Upstream	24-Feb-2021	1	3	24	0.02	0.53	8.99	0.07	7.26	14
Upstream	24-Mar-2021	1	4	10	0.06	0.11	8.41	0.06	8.14	5.6
Upstream	29-Apr-2021	1	1	< 15	0.05	0.12	9.8	0.09	8.18	13
Upstream	31-May-2021	1.3	8	4	0.09	0.1	9.5	0.02	8.1	2.8
Upstream	7-July-2021	1.5	7.2		0.09	0.12	8.9	0.08	7.94	6.9
Upstream	15-July-2021	1.2	1		0.06	0.09	8.5	0.06	8	4.8
Upstream	3-Aug-2021	1			0.01		8.13	0.06	7.98	5.8
Upstream	22-Sep-2021	1.2	1		0.006	0.05	8.97	0.03	7.88	7.95
Upstream	29-Sep-2021	1.8	1		0.02	0.041	9.8	0.06	7.91	8.15
Upstream	19-Oct-2021		1		0.067			0.07	7.84	7.73
Upstream	16-Nov-2021		1	2.5	0.08	0.071	9.38	0.07	7.92	7.65
Upstream	18-Nov-2021	0.3			0.04		9.22	0.08	7.88	7.27
	Mean	1.1300	2.8200	10.2213	0.0494	0.1369	9.0545	0.0625	7.9192	7.6375
	95%ile	1.6650	7.6400	21.3213	0.0900	0.3660	9.8000	0.0845	8.1580	13.4500
		Biological Oxygen Demand	Suspended Solids	COD Chemical Oxygen Demand	Total Ammonia N	Total Phosphorus P	Dissolved Oxygen	Ortho-Phosphate P	pH	Total Nitrogen N
Station	Sample Date	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l
Downstream	24-Feb-2021	1	7	30	0.02	0.62	9.15	0.11	7.96	16
Downstream	24-Mar-2021	1	4	10	0.05	0.1	8.73	0.05	8.16	5.6
Downstream	29-Apr-2021	1	1	< 15	0.04	0.12	10.35	0.07	7.23	20
Downstream	31-May-2021	1.4	11.6	14.6	0.11	0.11	9.44	0.05	7.61	3.5
Downstream	7-July-2021	1.2	2		0.06	0.13	9	0.08	8.15	5.7
Downstream	15-July-2021	1.2	1		1.04	0.1	8.5	0.06	7.95	5.2
Downstream	3-Aug-2021	1			0.01		7.77	0.04	7.85	
Downstream	22-Sep-2021	0.9	1		0.007	0.05	8.98	0.02	8.27	8.06
Downstream	29-Sep-2021	1	1		0.009	0.043	9.85	0.05	7.98	8.09
Downstream	19-Oct-2021		1		0.058			0.06	7.97	7.78
Downstream	16-Nov-2021	2.4	1		0.17		9.59	0.06	7.94	7.72
Downstream	18-Nov-2021	0.3			0.04		9.37	0.08	7.71	
	Mean	1.1273	3.0600	16.3017	0.1345	0.1591	9.1573	0.0608	7.8983	8.7650
	95%ile	1.9000	9.5300	27.6900	0.5615	0.4485	10.1000	0.0935	8.2095	18.2000

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of 50% of the LOD was used in calculating the mean and 95%ile concentrations.



Kildare Small Stream Risk Score 2021

Produced by

AQUAFACT International Services Ltd

For

Kildare County Council

November 2021

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Report Approval Sheet

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1. Introduction

AQUAFAC was contracted by Kildare County Council to carry out an SSRS assessment of discharges belonging to four wastewater treatment plants at Castledermot, Ballymore Eustace, Coill Dubh and Derrinturn respectively. A sample was taken upstream and downstream of each discharge point. The sampling was carried on the 12th of November 2021.

2. Methodology

2.1. Sampling

Eight kick samples were taken (See Figure 2.1 and Table 2.1). The two-minute kick and one minute stone wash sampling method was employed to collect samples of macroinvertebrates for analysis. This involved placing a standard hand net of pore size 500µm in the river, facing upstream and disturbing the riverbed in front of the net mouth. The surveyor then moved in a diagonal direction upstream to ensure that different micro-habitats were included in the sample. The kick method dislodges macroinvertebrates from the substrates and submerged plant material. This was continued for approximately two minutes and followed by one minute of stone washing (Lucey *et al.*, 1999).

The macroinvertebrate assemblages of each sample were identified and counted on the riverbank. The details of the macroinvertebrate assemblages were recorded on data sheets. The resulting species list was then used to assign the SSRS score to the sampled streams.

The IFI's 2010 Biosecurity Protocol for Field Survey Work document was followed during sampling. Nets and all other equipment were thoroughly disinfected between stations.

Figure 2.1: Kildare SSRS sampling sites.

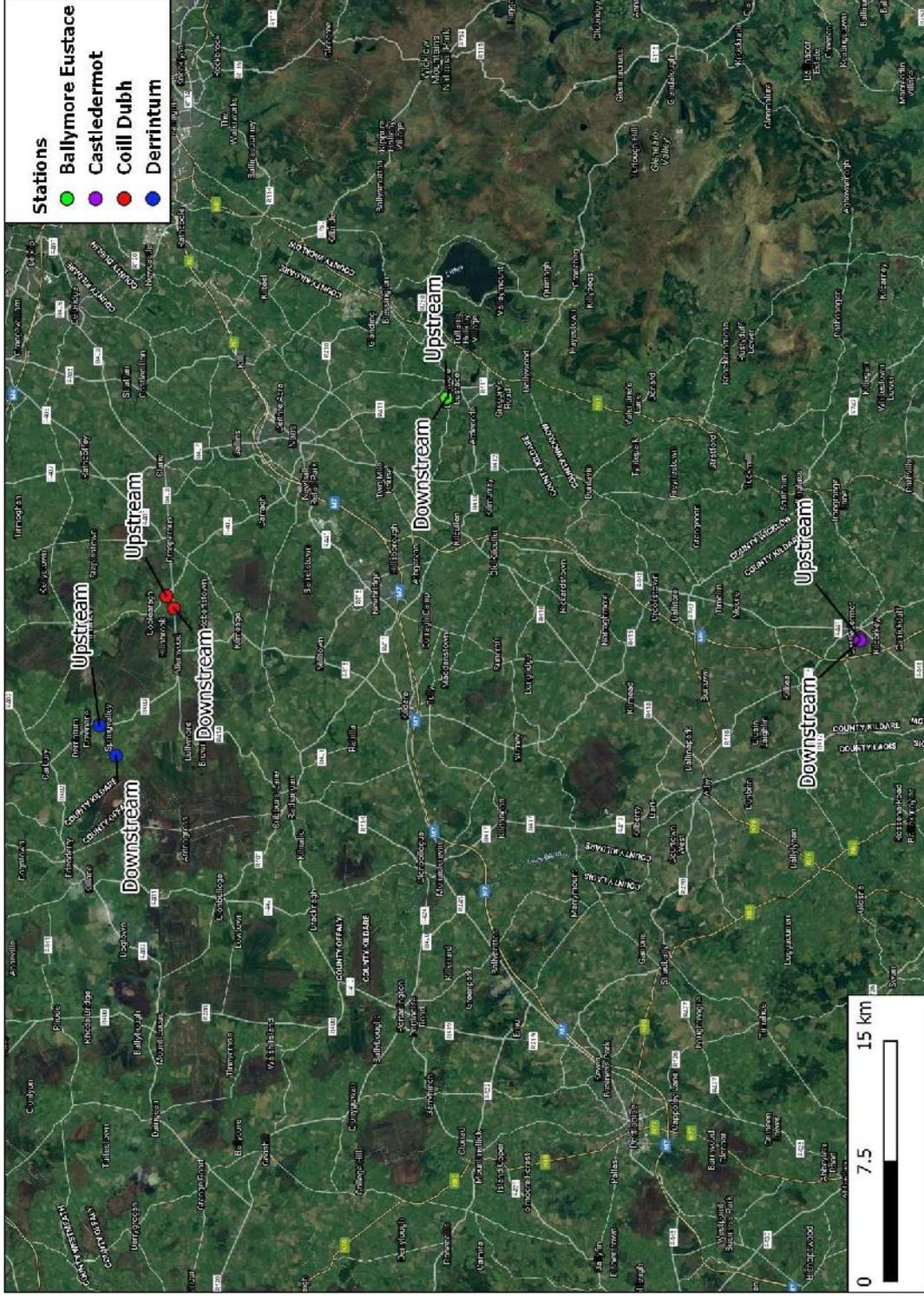


Table 2.1: Kildare SSRS station coordinates.

Station	Easting	Northing
Coill Dubh aSW1-PU	279586	227222
Coill Dubh aSW1-PD	278840	226750
Derrinturn aSW1-PU	271514	231178
Derrinturn aSW1-PD	269657	230144
Castledermot aSW1-PU	277669	184624
Castledermot aSW1-PD	277507	184609
Ballymore Eustace aSW1-PU	292154	210202
Ballymore Eustace aSW1-PD	292148	210304

2.2. Small Stream Risk Score

The Small Streams Risk Score (SSRS) is a biological risk assessment system for identifying rivers that are 'at risk' of failing to achieve the 'good' water quality status goals of the Water Framework Directive (WFD). It was developed by the Environmental Protection Agency (EPA) in association with the Western River Basin District (WRBD) in 2006 and revised in 2009.

The SSRS method is a rapid field methodology for risk assessment that is based solely on macroinvertebrate indicators of water quality and their well-understood response to pollution. Importantly, the SSRS score indicates whether or not the stream is at risk from pollution and not the ecological health of the stream. The SSRS score ranges from 0-11.2.

Table 2.2: SSRS Categories.

SSRS range	Category
<6.5	Stream at Risk
>6.5-7.25	Indeterminate stream may be at risk
>7.25	Probably not at risk

3. Results

3.1. *Coill Dubh*

Based on the SSRS score both the upstream and downstream stations were categorised as “Stream at risk” of not meeting Good status (See Table 3.2). Although the downstream station received a slightly higher score. The morphological characteristics of both stations were the same. The substrate was a mixture of cobbles and gravels with moderate levels of silt. The dominant land use in the area is pasture. The velocity was higher at the downstream station and there was less shading which may account for the slightly higher SSRS score.

3.2. *Derrinturn*

The downstream station recorded a slightly lower SSRS score. However, both the upstream and downstream stations were categorised as “Stream at risk” of not meeting Good status. The substrate at the upstream station was cobbles with a thick layer of silt (5-10cm) and leaf litter was abundant. The velocity of the stream was very slow with little perceivable flow. The downstream station substrate was a mix of cobbles and gravel with some sand. The velocity was moderate. There was cattle access both above and below the downstream station. The downstream station recorded the gastropod *Lymnaea*, while it was not recorded upstream. The oligochaete *Lumbriculus* was present in a higher abundance downstream.

3.3. *Castledermot*

Base on the SSRS score both the upstream and downstream stations were categorised as “Stream at risk” of not meeting Good status, although the downstream station received a higher score. The stream substrate was the same at both stations with a mix of cobbles and gravel. The velocity was fast at both stations. The downstream station was mostly riffle while the upstream station was mostly glide. Significant levels of calcification were present on the substrate at both upstream and downstream. This is likely due to eutrophication.

3.4. Ballymore Eustace

The downstream SSRS score was higher than the upstream station. As such the downstream station was characterised as “Probably not as risk” while the upstream station was “Stream at risk”. The river substrate was the same at both stations with a mix of boulders, cobbles and gravel. The flow in the river was torrential. There was no siltation present. One female white-clawed crayfish was recorded at the upstream station. It appeared to be health with no sign of infection.

Table 3.1: Species list

Relative abundance of macroinvertebrates 1 = 1-5, 2 = 6-20, 3 = 21-50, 4 = 51-100 and 5 = 101+								
Taxa	Coill Dubh		Derrintum		Castledermot		Ballymore Eustace	
	Upstream	Downstream	Upstream	Downstream	Upstream	Downstream	Upstream	Downstream
Ephemeroptera								
<i>Heptagenia</i>					3	1		2
<i>Caenis</i>								1
<i>Ephemera danica</i>							1	
Trichoptera								
Limnephilidae	1	2	1	1	1			
Hydropsychidae	1				1	2	1	3
Sericostomatidae		2						
Glossosomatidae								1
<i>Rhyacophila</i>						1		
<i>Philopotamidae</i>						1		
Gastropoda								
<i>Lymnaea</i>				2			2	
<i>Potamopyrgus</i>	2							
<i>Ancylus</i>								1
Oligochaeta								
<i>Lumbriculus</i>			2	3				
Diptera								
Chironomidae		2	3	3	3	1		
Simuliidae					4	4	1	
Dicranota					1	1		

Table 3.2: Biological sampling results.

Station	SSRS score	SSRS category
Coill Dubh aSW1-PU	3.2	Stream at risk
Coill Dubh aSW1-PD	4.8	Stream at risk
Derrinturn aSW1-PU	2.4	Stream at risk
Derrinturn aSW1-PD	0.8	Stream at risk
Castledermot aSW1-PU	4.8	Stream at risk
Castledermot aSW1-PD	6.4	Stream at risk
Ballymore Eustace aSW1-PU	4	Stream at risk
Ballymore Eustace aSW1-PD	8	Probably not at risk

4. Discussion

There was no evidence of impact on the streams due to the discharges at Castledermot, Ballymore Eustace and Coill Dubh with all downstream stations receiving a higher SSRS score than upstream. Although both the upstream and downstream stations for Derrinturn were categorised as “At risk” the downstream station received a lower SSRS score. There was cattle access both above and below the downstream station. This may have impacted on the downstream SSRS score.

All stations except Ballymore Eustace downstream were categorised as “Stream at risk” of not meeting Good status. The Ballymore Eustace downstream station was categorised as “Probably not at risk”.

5. References

EPA. 2015. Guidance on Application and Use of the SSRS in Enforcement of Urban Waste Water Discharge Authorisations in Ireland.

<https://www.epa.ie/publications/compliance--enforcement/waste-water/SSRS-in-Enforcement-of-UWWDAs.pdf> Accessed September 2021.

Lucey, J., Bowman, J.J., Klabby, K.J., Cunningham, P., Lehane, M., MacCarthaigh, M., McGarrigle, M.L. and Toner, P.F. 1999. Water Quality in Ireland, 1995 – 1997. EPA.

Appendix 1

Photo log



Coill Dubh upstream



Coill Dubh Downstream



Derrinturn upstream



Derrinturn downstream



Ballymore Eustace upstream



Ballymore Eustace downstream



Castledermot upstream



Castledermot downstream