Annual Environmental Report



Ballymore Eustace



D0238-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0238-01, Ballymore Eustace, 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 any improvements undertaken is provided where applicable.

There were no capital works, significant changes or operational changes undertaken in 2024.

1.2 TREATMENT SUMMARY

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

• BALLYMORE EUSTACE NEW WWTP with a Plant Capacity PE of 2000, 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
TPEFF1400D0238SW001	BALLYMORE EUSTACE NEW 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 BALLYMORE EUSTACE NEW WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLYMORE EUSTACE NEW 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 Phosphorus (as P) mg/l	10	13	6.20
COD-Cr mg/l	10	959	588
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/I	10	365	199
Suspended Solids mg/l	10	418	285
Hydraulic Capacity	N/A	310	166

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 less 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 - TPEFF1400D0238SW000

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	10	N/A	N/A	35	Pass
Suspended Solids mg/l	35	87.5	N/A	10	N/A	N/A	15	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	10	N/A	N/A	3.90	Pass
pH pH units	6	9	N/A	10	N/A	N/A	7.32	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	10	N/A	N/A	0.061	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	10	N/A	N/A	0.888	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	10	1	N/A	0.467	Pass
Conductivity @20°C μS/cm	N/A	N/A	N/A	10	N/A	N/A	579	
Faecal coliforms cfu/100ml	N/A	N/A	N/A	10	N/A	N/A	17098	

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 TPEFF1400D0238SW000

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	292660, 209723	RS09L010400	No	No	No	No	Good
Downstream	292478, 209783	RS09L010500	No	No	No	No	Good

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	RS09L010400	0.707	RS09L010500	0.707	1.50	0
Ammonia-Total (as N) mg/l	RS09L010400	0.022	RS09L010500	0.016	0.065	-9.5
ortho-Phosphate (as P) - unspecified mg/l	RS09L010400	0.008	RS09L010500	0.010	0.035	4.9
Total Hardness (as CaCO3) mg/l	RS09L010400	71	RS09L010500	77	N/A	
Dissolved Oxygen % Saturation	RS09L010400	102	RS09L010500	105	N/A	
Dissolved Oxygen mg/l	RS09L010400	11	RS09L010500	11	N/A	
True Colour mg/litre Pt Co	RS09L010400	54	RS09L010500	56	N/A	
Total Oxidised Nitrogen (as N) mg/l	RS09L010400	0.793	RS09L010500	0.800	N/A	
Chloride mg/l	RS09L010400	9.62	RS09L010500	9.76	N/A	
Conductivity @25°C μS/cm	RS09L010400	163	RS09L010500	173	N/A	
Temperature °C	RS09L010400	12	RS09L010500	12	N/A	
pH pH units	RS09L010400	7.78	RS09L010500	7.88	N/A	

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Alkalinity-total (as CaCO3) mg/l	RS09L010400	62	RS09L010500	68	N/A	

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 EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a deterioration in Ortho-P concentrations 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.

Other causes of deterioration in water quality in the area are unknown.

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 - BALLYMORE EUSTACE NEW WWTP

2.1.4.1 Treatment Efficiency Report - BALLYMORE EUSTACE NEW 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)
cBOD	10427	227	98
ТР	325	52	84
COD	30872	2034	93
SS	14951	895	94

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

2.1.4.2 Treatment Capacity Report Summary - BALLYMORE EUSTACE NEW 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.

BALLYMORE EUSTACE NEW WWTP			
Peak Hydraulic Capacity (m³/day) - As Constructed			
DWF to the Treatment Plant (m ³ /day)	450		
Current Hydraulic Loading - annual max (m³/day)			
Average Hydraulic loading to the Treatment Plant (m³/day)			
Organic Capacity (PE) - As Constructed			
Organic Capacity (PE) - Collected Load (peak week) ^{Note1}			
Organic Capacity (PE) - Remaining			
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 - BALLYMORE EUSTACE NEW 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 2024.						

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 Uisce Éireann 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	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	SWO exceptional rainfall and overflow expected	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer	
Number of Incidents in 2024	2	
Number of Incidents reported to the EPA via EDEN in 2024		
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 (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2024 (No. of events)	Total volume discharged in 2024 (m³)	Monitoring Status
SW2	292502, 209683	Yes	Low Significance	Meeting Criteria	Unknown	286	Monitored

The contents presented in this table include the most up to date information available at the time of writing. Any TBC SWO(s) were identified as part of the ongoing National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much wastewater discharge by metered SWOs during the year (m ³)?	286
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?	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 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/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0238-SIP:01	Discharges from SW1-P (existing WWTP discharge) to cease	А	31/12/2012	Yes	Works Completed		
D0238-SIP:02	SW2 - Upgrading of SWO to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995".	С	31/12/2012	Yes	Works Completed		
D0238-SIP:03	SW3 - Upgrading of SWO to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995".	С	31/12/2012	Yes	Works Completed		
D0238-SIP:04	Waste Water treatment plant and ancillary works	С	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

ImprovementImprovement Description / or any Operational Improvements		Improvement Source	Expected Completion Date	Comments		
No additional improvements planned at this time.						

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	Included in this AER
D0238-01-Priority Substances Assessment	Yes	No
D0238-01-Small Stream Risk Score Assessment	Yes	Yes

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	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	Yes

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

Date: 23/04/2025

This AER has been produced by Uisce Éireann's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of,

Eleanor Roche

Head of Environmental Regulation.

7 APPENDIX

Appendix

Appendix 7.1 - Small Stream Risk Score Assessment

Kildare County Council

Ballymore Eustace Small Stream Risk Score 2024

Mícheál McHugh Jewell, Daniel Dunleavy



AQUAFACT Ref: P14738 December 2024 COMMERCIAL IN CONFIDENCE **Client: Kildare County Council**

Address: Devoy Park, Naas Co Kildare W91 X77F

Reference no: P14738

Date of issue: 02/12/2024

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Report Approval Sheet

Client	Kildare County Council
Report Title	Ballymore Eustace Small Stream Risk Score 2024
Job Number	P14738
Report Status	Final
Issue Date	2/12/2024

Rev	Status	Issue Date	Document File Name	Author (s)	Approved by:
1 Draft	Draft	00/11/2024	P14738 Ballymore Eustace	Mícheál McHugh Jewell,	E McCormack
T	Dialt	00/11/2024	SSRS Nov2024_Draftv1	Daniel Dunleavy	E. MICCOTTIACK
2	Final	2/12/2024	P14738 Ballymore Eustace	Mícheál McHugh Jewell,	E McCormack
Z	FIIIdi	2/12/2024	SSRS Nov2024_final	Daniel Dunleavy	





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List of Acronyms/Glossary

D/S	Downstream
EPA	Environmental Protection Agency
G.OL.D	Gastropods, Oligochaetes, Dipterans
IFI	Inland Fisheries Ireland
SSRS	Small Stream Risk Score
U/S	Upstream
WFD	Water Framework Directive
WRBD	Western River Basin District
WWTP	Wastewater Treatment Plant



1. Introduction

AQUAFACT was contracted by Kildare County Council to carry out an SSRS assessment of the discharge belonging to Ballymore Eustace wastewater treatment plants. A sample was taken upstream and downstream of the discharge point. The sampling was carried out on the 15th of October 2024.

2. Methodology

2.1 Sampling

Two 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 sample 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: Upstream and Downstream site positions on the River Liffey at Ballymore Eustace



Table 2.1: Ballymore Eustace SSRS station coordinates.	
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Station	Latitude	Longitude
Ballymore Eustace Upstream	53.1346032	-6.6232350
Ballymore Eustace Downstream	53.135652	-6.623528

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 (AR)
>6.5-7.25	Indeterminate/Stream may be at risk
>7.25	Probably not at risk (PNAR)



3. Results

The upstream station was categorised as 'Stream at Risk' (AR) with a score of 4, while the downstream station was 'Probably not at risk' (PNAR). The river substrate was the same at both stations with a mix of boulders, cobbles, and gravel. The flow in the river was slow at the upstream site and fast at the downstream site. The water very clear. There was no siltation present. The downstream site had large riffle areas and was characterised by a high abundance of *Heptagenia* and Hydropsychidae.

Таха	Upstream	Downstream
Ephemeroptera		
Ecdyonurus		1
Heptagenia	1	4
Caenis	1	1
Plecoptera		
Leuctra	1	2
Trichoptera		
Hydropsychidae	1	5
Rhyacophilidae		2
Glossosomatidae		1
Philopotamidae	1	
G.OI.D		
Potamopyrgus	1	2
Physa	1	
Ancylus		1
Lumbriculus	1	
Chironomidae	2	2
Simuliidae		2
Ampullaceana balthica	2	1
Physella acuta	1	
Asellus	Numerous	Few/low

Table 3.2: Biological sampling results

Station	SSRS Score	SSRS Category
Ballymore Eustace Upstream	4	Stream at Risk (AR)
Ballymore Eustace Downstream	7.2	Indeterminate/Stream may be at risk (Ind.)



4. Ballymore Eustace WWTP Comparison 2016 to 2024

Table 4.1 compares the SSRS results from 2016 to 2024 and Figure 4.1 displays the trend over time. The downstream station was categorised as 'Probably not at risk' in 2017, 2018, 2020, 2021, 2022 and 2023. The upstream station was 'Probably not at risk' in 2018, 2022 and 2023. The upstream station had been displaying an upward trend of improving water quality since it was categorised as 'at risk' in 2021 but has since returned to an 'at risk' category this year. The downstream station has also reduced from 'Probably not at risk' since 2023.

Year	U/S SSRS	U/S RC	D/S SSRS	D/S RA
2024	4	AR	7.2	Ind.
2023	9.6	PNAR	8.8	PNAR
2022	8	PNAR	8	PNAR
2021	4	AR	8	PNAR
2020	8	PNAR	8.8	PNAR
2019	n/a	n/a	n/a	PNAR
2018	9.6	PNAR	8	n/a
2017	5.6	AR	8.8	PNAR
2016	3.2	AR	4.8	AR
2015	n/a	n/a	n/a	n/a

 Table 4.1: Ballymore Eustace SSRS Comparison 2015-2024



Figure 4-1 : SSRS for Upstream and Downstream sites since 2015



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/wastewater/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 – Site photos



Downstream Site facing downstream





Downstream Site facing upstream





Upstream Site facing downstream





Upstream Site facing upstream



Appendix 2 – SSRS Datasheets

CREATERING FIEL	++-/	Location:	Land Id Bacer	13110.2	Grid (6 figure):	0.0151	710
1.207	MITO	Character Onde	ASWI -	ru	Stream flow	12174,	212
ursi	KCAPI	Scream Orde	ir;		Riffle		
Field Ch	emistry	Modifications:)	r/N Canalised-wide	ened-bank erosion-	Riffie/Glide		
00%	4.4. 48	Dominant Type			Slow flow		
DO mg/i	0.35	- Bedrock					
Temp (°C)	12.77	Boulder (>128mm	n)				
Conductivity		Cobble (32-128m	m)				
рН	7.91	Gravel (8-32mm)	(me				
Bank width (cm)	2300	Sand (0.25-2mm)	any l				
Wet width (cm)	2100	(Silt (<0.25mm)					
Avg Depth (cm)	50	Sione: Low + Me	dium – High – Ver	ry High			
Staff gauge		Gaelagua Calcan	anue Clineson Min	2	Shading: High - Modera	ate - Low - No	пе
Velocity	Colour	Geology: Calcare	cous-succous-mo	ed			
Torrential	None	Substratum Con	sdition: Calcareou	us-Compacted-	Cattle access Y: upstrea	am – downstre	am of
Fast	Sight	Loose - Normai					
Slow	High	Stoney bottom	uddy bottom Mud	over stones	Bhata (V) N		
Very slow	- Cityri	Decree of clinet	Inna Class Slight	Madagatelhissuu	Phototy		
Clarity	Discharge	Degree of siltat	ion: Cean-signe	moderatelineavy			
Very dear	Flood	Depth of mud: I	None: <1cm: 1-5c	:m1.5-10cm >10cm			
Clear	Normal	Litter: None - Pr	esent)- Moderate	- Abundant			
Finhel hubble	6	Filamentous Alg	jae:		Sewage Fungus:		
Signey turbid	LOW	None - Present	Moderate - Abund	fant	None - Present - Modera	te - Abundant	
Highly turbid	Very Low	Main land use u	/s:	Sample	Sampled in Minutes:		
	Dry Decest Read	Pasture	Urban	retained:	Pond net x 2		
	Recent Flood	Forestry	Offer	U.	Stone wash x		
	-	1	0.0 101		Weed sweep x		
Seneral Commen	its: ates are divided into	Macroinverte	brate Compo	sition		Relative	e nce
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NOTE Baetis is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that Baetis is not counted in SSRS. See Appendix B for more details on how to identify Baetis.

Upstream



Relative Abundance Score 0 4 6 4 8	Group 2 - 2 Tails Plecoptera No. of taxa 0 1 2+ thundance 3+ Score 0 4 6 6 8
Group 3 Trichoptera No. of taxa 0 1-2 3+ Abundance Score 0 2 4	Group 4 G.OLD No. of taxa 0 1-2 3-6 7+ 3-6 7+ Score 0 4 2 4 0 4 2 4 0 4 0 4 0 4 0 4 0
Absent Few (1-20) 4 2 Common (>20) 4 2 Common (>20) (>20) Common (>20) (Step 2 a) Index Score Group 1 b) Index Score Group 2 c) Index Score Group 3 d) Index Score Group 5 e) Index Score Group 5
Step 3. Calculate the Total Index Score, the Average Index Score Total Index Score (TIS) Sum (a+b+c+d+e) Step 4. Assess the stream by comparing the final SSR score with the stream by comparing the final SSR score with the stream stream with the stream stream with the stream	ere and the SSR Score using the boxes below (AIS) 2 SSR Score (AIS × 2) 4 th the categories below and tick the appropriate box <6.5 am at risk

Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from *each macroinvertebrate group* calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.

Upstream II



Station no		Location	1.191	00	Grid (6 figure))		
station no.	-	Location:	15W1 -	N	and (o ngure):	292.148	,210
DOWNSTR	EAM	Stream Order:			Stream flow:		
Field Ch	emistry	Modifications: Y/N	Canalised-wide	ened-bank erosion-	Riffle/Gide		
DO%	98.30	arterial drainage			Slow flow		
DO mg/l	10.22	Dominant Types:					
Temp (°C)	13.61	Boulder (>128mm)					
Conductivity		Cobble (32-128mm)					
pH	2.12	Gravel (8-32mm)					
Bank width (cm)	7- 65	Fine Gravel (2-8mm)					
Wet width (cm)	2500	Sand (0.25-2mm)					
for Death (cm)	2100	Sat (<0.25mm)					
ang pepur (un)	50	Slope: Low - Mediur	n – High – Ver	ry High	Chadlers Mah. Mar	Incodes (Lough Ma	
Velocity	Colour	Geology: Calcareous	Siliceous-Mba	ed	shading: high - Hoc	Berate + LOWY NO	ne
Torrential	None	Substratum Condi	tion: Calcareo	us-Compacted-	Cattle access Y: unst	ream - downstre	am of N
(Fast)	(Sinh)	Loose - Normal	awina Concoroon	us competited.	catere access 1, ops	o com o com do c	anoth
Moderate	Moderate	Substratum:			1		
Slow	High	Stoney bottom Mudd	y bottom-Mud	over stones	Photo: Y/ N		
Very slow		Degree of siltation	Clean-Slight-	Moderate-Heavy			
Clarity	Discharge	Depth of muduling	and low tota	m: 5-10mm > 10mm			
(Very dear)	Flood	sepen or multi-Mon	e TOR: 1-50	111. 3-10011; 3-1001			
Clear	(Normal)	Litter: None - Prese	Noderate	- Abundant			
Slahtly turbid	Low	Filamentous Algae	Conta asos	1.422	Sewage Fungus:	Service Contract	
anging carolo	LUN	None - Present - Mo	derate - Abunc	dant	None - Present - Mod	erate - Abundant	
Highly turbid	Very Low	Main land use u/s:	Linkson	Sample	Sampled in Minutes	đ	
	Recent Flood	Bog	CTilagen	V N	Pond net x Z		
	PODGIN PROG	Forestry	Other	0.	Stone wash x		
			-		Waad eugan v		
General Commen Other	nts: - land	USE : R	esiden	tial	Weed Sweep X	Relative	1
General Commen C they The macroinverteby Group 1 = 1 Group 2 = 1	rates are divided into Ephemeroptera (3-tail Pecoptera (2-tails) - r	Macroinvertebra the following 5 specifi (s) – note that tails may note that tails may be	ate Compo groups: y be damaged damaged durin	tial	Weeu Sweep X	Relative Abundai 1-5 5-20	nce
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NOTE Baetis is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that Baetis is not counted in SSRS. See Appendix B for more details on how to identify Baetis.

Downstream





Downstream II

