Annual Environmental Report

2023



Kilmacreannan

D0513-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

- 1.1 Annual Statement of Measures
- 1.2 Treatment Summary
- 1.3 ELV OVERVIEW
- 1.4 LICENSE SPECIFIC REPORT INCLUDED IN AER

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

- 2.1 KILMACRENNAN WWTP TREATED DISCHARGE
 - 2.1.1 INFLUENT SUMMARY KILMACRENNAN WWTP
 - 2.1.2 EFFLUENT MONITORING SUMMARY KILMACRENNAN WWTP -
 - 2.1.3 Ambient Monitoring Summary for The Treatment Plant Discharge -
 - 2.1.4 OPERATIONAL REPORTS SUMMARY FOR KILMACRENNAN WWTP
 - 2.1.5 SLUDGE/OTHER INPUTS TO KILMACRENNAN WWTP

3 COMPLAINTS AND INCIDENTS

- 3.1 COMPLAINTS SUMMARY
- 3.2 REPORTED INCIDENTS SUMMARY
 - 3.2.1 SUMMARY OF INCIDENTS
 - 3.2.2 Summary of Overall Incidents

4 INFRASTRUCTURAL ASSESSMENT AND PROGRAMME OF IMPROVEMENTS

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
 - 4.1.1 SWO IDENTIFICATION AND 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

5 LICENCE SPECIFIC REPORTS

- 5.1 PRIORITY SUBSTANCES ASSESSMENT
- 5.2 SMALL STREAM RISK SCORE ASSESSMENT

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

7 APPENDIX

- 7.1 Ambient monitoring summary
- 7.2 SMALL STREAM RISK SCORE ASSESSMENT

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0513-01, Kilmacreannan, 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.

1.2 TREATMENT SUMMARY

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

• Kilmacrennan WWTP with a Plant Capacity PE of 500, 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
TPEFF0600D0513SW001	Kilmacrennan WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceo mg/l COD-Cr mg/l ortho-Phosphate (as P) - unspecified mg/l Suspended Solids mg/l

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report

Small Stream Risk Score Assessment

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 KILMACRENNAN WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - KILMACRENNAN 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	873	251
ortho-Phosphate (as P) - unspecified mg/l	6	9.40	2.11
BOD, 5 days with Inhibition (Carbonaceo mg/l	6	231	72
Ammonia-Total (as N) mg/l	6	74	23
pH pH units	6	7.80	7.57
Suspended Solids mg/l	6	432	100
Hydraulic Capacity	N/A	684	390

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 greater 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 - TPEFF0600D0513SW001

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	6	1	1	97	Fail
Suspended Solids mg/l	10	25	N/A	6	5	3	37	Fail
BOD, 5 days with Inhibition (Carbonaceo mg/l	10	20	N/A	6	5	5	43	Fail
pH pH units	9	9	N/A	6	N/A	N/A	7.48	Pass
Ammonia-Total (as N) mg/l	1	1.2	N/A	6	6	6	25	Fail
ortho- Phosphate (as P) - unspecified mg/l	0.5	0.6	N/A	6	6	6	2.04	Fail
Nitrite (as N) mg/l	N/A	N/A	N/A	1	N/A	N/A	0.156	
Conductivity @20°C µS/cm	N/A	N/A	N/A	6	N/A	N/A	604	
Nitrate (as N) mg/l	N/A	N/A	N/A	1	N/A	N/A	0.764	

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):

Refer to the incidents section of this report.

Significance of Results:

The WWTP is not in compliance with the ELVs, as set out with the WWDL. The impact on receiving waters is assessed further in section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0600D0513SW001

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	214107, 420471	RS39L020270	No	No	Yes	No	Moderate
Downstream	214159, 420482	RS39L020280	No	No	Yes	No	Moderate

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	RS39L020270	1.00	RS39L020280	1.17	1.50	11.1
Ammonia-Total (as N) mg/l	RS39L020270	0.026	RS39L020280	0.145	0.065	182.5
ortho-Phosphate (as P) - unspecified mg/l	RS39L020270	0.039	RS39L020280	0.045	0.035	16.7
Nitrite (as N) mg/l	RS39L020270	0.011	RS39L020280 0.061		N/A	
Nitrate (as N) mg/l	RS39L020270	0.727	RS39L020280	0.841	N/A	
Temperature °C	RS39L020270	11	RS39L020280	12	N/A	
Suspended Solids mg/l	RS39L020270	4.24	RS39L020280	4.24	N/A	
Dissolved Oxygen % Saturation	RS39L020270	100	RS39L020280	95	N/A	
Conductivity @20°C µS/cm	RS39L020270	192	RS39L020280	200	N/A	
pH pH units	RS39L020270	7.73	RS39L020280	7.63	N/A	

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 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 (as N) mg/l ortho-Phosphate (as P) - unspecified mg/l, 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.

The discharge from the wastewater treatment plant does have an observable impact on the designated shellfish water quality.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - KILMACRENNAN WWTP

2.1.4.1 Treatment Efficiency Report - Kilmacrennan 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	35792	13747	62	
ТР	N/A	N/A	N/A	
cBOD	10309	6070	41	
ss	14276	5204	64	
TN	N/A	N/A	N/A	

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

2.1.4.2 Treatment Capacity Report Summary - Kilmacrennan 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.

Kilmacrennan WWTP	
Peak Hydraulic Capacity (m³/day) - As Constructed	330
DWF to the Treatment Plant (m³/day)	110
Current Hydraulic Loading - annual max (m³/day)	684
Average Hydraulic loading to the Treatment Plant (m³/day)	390.16
Organic Capacity (PE) - As Constructed	500
Organic Capacity (PE) - Collected Load (peak week)Note1	875
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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 - KILMACRENNAN 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	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 2023.							

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)	
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes	
Breach of ELV	WWTP upgrade required to meet ELV	Yes	No	

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	2
Number of Incidents reported to the EPA via EDEN in 2023	2
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	No. of times activated in 2023 (No. of events)	Total volume discharged in 2023 (m3)	Monitoring Status
SW002	214169,420488	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored

Any TBC SWO(s) were identified as part of the on-going 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 (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?	No
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	Unknown

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
D0513-SIP:01	Cessation or upgrade of storm water overflow (SW002) to comply with the criteria outlined in the DoECLG 'Procedures and Criteria in relation to Storm Water Overflows' (1995).	С	31/12/2019	Yes	At Planning Stage	2026	
D0513-SIP:02	Infiltration programme - diversion of storm water from the collection network	С	31/12/2019	Yes	At Planning Stage	2026	Mobilistation. Procurement process complete. Contract for upgrade to start in 2024
D0513-SIP:03	Replacement of malfunctioning Rotating Biological Contactor	С	30/06/2014	Yes	Works Completed		
D0513-SIP:04	Upgrade of Kilmacrennan Waste Water Treatment Plant to provide tertiary treatment	С	31/12/2019	Yes	At Planning Stage	2026	

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
D0513-SIP:05	Upgrade of waste water collection network	С	31/12/2019	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
No additional improver	ments 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
D0513-01-Priority Substances Assessment	Yes	No
D0513-01-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?	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	N/A
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: 18/09/2024

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 - Ambient monitoring summary

Appendix 7.2 - Small Stream Risk Score Assessment

Kilmacrennan AMBIENT MONITORING SUMMARY 2023

Ambient			Receiving V	Waters Design	nation (Y/N)		WFD Status
irom www.ll.cor	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish	
Upstream Monitoring Point	214107, 420471	RS39L020270	No	No	Yes	No	Moderate
Downstream Monitoring Point	214159, 420482	RS39L020280	No	No	Yes	No	Moderate

Ambient Impact Assessment Table

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS (Mean)	% EQS
BOD mg/l	RS39L020270	1.0	RS39L020280	1.2	1.5	13.3%
Ammonia (as N) mg/l	RS39L020270	0.032	RS39L020280	0.145	0.065	173%
ortho-Phosphate (as P) - unspecified mg/l	RS39L020270	0.051	RS39L020280	0.057	0.035	17.1%

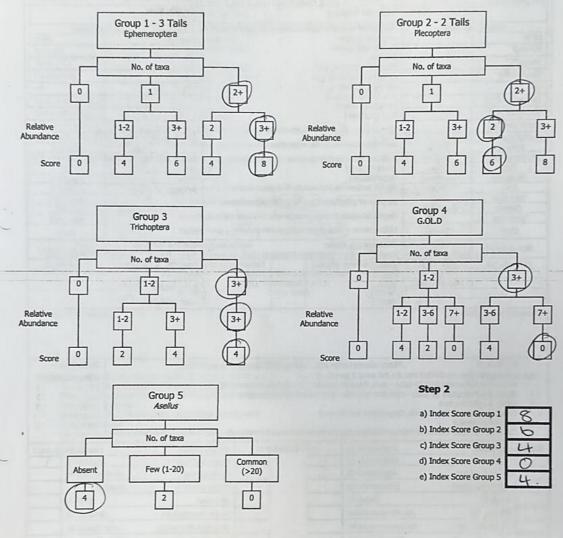
Kilmacreannan D0513-01 Ambient Monitoring Data

Station	Date	Ammonia (as N)	BOD	Conductivity @ 20°C	DO	Nitrate (as N)	Nitrite (as N)	Orthophosphate	рН	Suspended Solids	Temperature	SSRS
Kilmacrennan - Upstream	21-Feb-23	<0.015	1	176	104.7	NT	NT	<0.05	7.4	<6	10	SSRS score: 8.8, Stream probably not at risk
Kilmacrennan - Upstream	18-Apr-23	<0.015	1	205	102.7	NT	NT	<0.05	7.6	<6	11.7	NT
Kilmacrennan - Upstream	13-Jun-23	0.081	1	322	94.9	0.727	<0.015	<0.05	8	<6	16.4	NT
Kilmacrennan - Upstream	28-Aug-23	<0.015	1	152.2	96.3	NT	NT	0.058	8.1	<6	14.2	NT
Kilmacrennan - Upstream	12-Oct-23	<0.05	1	169.4	96.7	NT	NT	<0.05	7.7	<6	10.1	NT
Kilmacrennan - Upstream	11-Dec-23	<0.015	1	126.3	103	NT	NT	<0.05	7.6	<6	6.3	NT
Kilmacrennan - Downstream	21-Feb-23	0.053	1	190	103.6	NT	NT	<0.05	7.4	<6	10.9	SSRS score: 6.4, Stream at risk
Kilmacrennan - Downstream	18-Apr-23	0.129	1	213	97.3	NT	NT	<0.05	7.4	<6	11.8	NT
Kilmacrennan - Downstream	13-Jun-23	0.1	2	320	81.8	0.841	0.061	0.093	7.6	<6	16.7	NT
Kilmacrennan - Downstream	28-Aug-23	0.544	1	165.6	95.2	NT	NT	<0.05	8	<6	14.3	NT
Kilmacrennan - Downstream	12-Oct-23	0.034	1	176	94.8	NT	NT	<0.05	7.8	<6	10.1	NT
Kilmacrennan - Downstream	11-Dec-23	<0.015	1	133.1	100.1	NT	NT	<0.05	7.6	<6	6.4	NT

Station no.	33	Location:	IC Kilonor	2113123	Grid (6 figure):	TOO IN LOCAL	
		Stream Orde		161401100	Stream flow:		
		Bus manuscharious			Riffle		
Field Che	emistry		Y/N Canalised-wid	lened-bank erosion-	Territor amaid		
		arterial drainage Dominant Type			Slow flow		
DO mg/l		Bedrock	.				_
Temp (°C)	the second to the	Boulder (>128mm	n) /		- The state of the state of	A September 1	
Conductivity		Cobble (32-128m	m)				
pH		Gravel (8-32mm)					
Bank width (cm)	P.O.L.	Fine Gravel (2-8n					
Wet width (cm)	C. posterior de la constante de	Sand (0.25-2mm) Silt (<0.25mm)					
Avg Depth (cm)							
Staff gauge		Slope: Low - Me	dium - High - Ver	ry High	Shading: High Mod	erate - Low - No	ne
Velocity	Colour	Geology: Calcare	eous-Siliceous-Mix	red	Silading. (right (riod	Lon In	,,,,
Torrential	None	Substratum Cor	ndition: Calcareo	us-Compacted-	Cattle access Y: upstr	ream - downstre	am o
Fast	Slight	Loose - Normal	iuidon. Calcarco	us compacted	College Books (17)		
Moderate	Moderate	Substratum:					
Slow	High	Stoney bottom-M	uddy bottom-Mud	over stones	Photo: Y (N)		
Very slow		Degree of siltat	ion Clean Slight	Moderate-Heavy	1		
Clarity	Discharge		-				
Very dear	Flood	Contract of the contract of th		m: 5-10cm: >10cm	Les Sangle		
Clear	Normal	Litter: None - Pr	esent - Moderate	- Abundant			
Slightly turbid	Low	Filamentous Alg			Sewage Fungus:		
	A-1/2 (1981)	None - (Present)			None - Present - Mode		
Highly turbid	Very Low	Main land use u		Sample	Sampled in Minutes:		
	Dry	(Bog)	Urban Tillage	retained:	Pond net x Z		
	Recent Flood	Forestry	Other	120	Stone wash x Z		
		, under	Outer		Weed sweep x 2		
		Macroinverte		sition			
			alfia averturas			Relative	
		the following 5 spe		during sampling		Abunda	nce
	phemeroptera (3-tai	ls) - note that tails	may be damaged			Abunda 1-5	nce
Group 3 = Ti	phemeroptera (3-tai lecoptera (2-tails) - richoptera	ls) – note that tails note that tails may l	may be damaged be damaged durin			Abunda 1-5 6-20	nce
 Group 4 = G 	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OL.D (Gastropoda,	ls) – note that tails note that tails may l	may be damaged be damaged durin			Abunda 1-5	nce
• Group 4 = G • Group 5 = A	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus	ls) – note that tails note that tails may l Oligochaeta and Dip	may be damaged be damaged durin otera)	ig sampling	l mon	Abunda 1-5 6-20 21-50 51-100 101+	nce
• Group 4 = G • Group 5 = A	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus	ls) – note that tails note that tails may l Oligochaeta and Dip	may be damaged be damaged durin otera)	ig sampling	oup below: (Abundance – A	Abunda 1-5 6-20 21-50 51-100 101+	nce
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus	ils) – note that tails note that tails may l Oligochaeta and Dig a and relative abun Ecdyonurus Ab	may be damaged be damaged durin otera)	g sampling	oup below: (Abundance – Al	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus	ils) – note that tails note that tails may l Oligochaeta and Dig a and relative abun	may be damaged be damaged during otera) dance of each ma	g sampling	oup below: (Abundance – A	Abunda 1-5 6-20 21-50 51-100 101+	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus	ils) – note that tails note that tails may l Oligochaeta and Dig a and relative abun Ecdyonurus Ab	may be damaged be damaged durin otera) dance of each ma	g sampling		Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus	ils) – note that tails note that tails note that tails may le Oligochaeta and Dip to a and relative abun Ecdyonurus Ab Rhithrogena Ab	may be damaged be damaged during otera) dance of each ma	g sampling	F	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus	Is) — note that tails note that tails note that tails may lead to the that tails may lead to the tails may lea	may be damaged be damaged during otera) dance of each ma	g sampling	F	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab mphinemura Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus total number of tax	Is) – note that tails note that tails note that tails may lead to the that tails may lead to the tails and relative abune Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerelia Ab Caenis Ab	may be damaged be damaged during otera) dance of each ma	g sampling	F	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Protonemura Ab Perla Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus total number of tax	Is) — note that tails note that tails note that tails may lead to the that tails may lead to the tails and relative abunta and relative abunta tails and the tails and tai	may be damaged be damaged during otera) dance of each ma	g sampling	F	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab mphinemura Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus total number of tax	Is) – note that tails note that tails note that tails may lead to the that tails may lead to the tails and relative abune Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerelia Ab Caenis Ab	may be damaged be damaged during otera) dance of each ma	g sampling	F At	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Protonemura Ab Perla Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus total number of tax	Is) — note that tails note that tails note that tails may lead to the that tails may lead to the tails and relative abunta and relative abunta tails and the tails and tai	may be damaged be damaged during otera) dance of each ma	g sampling	F AI	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Protonemura Ab Perla Ab Dinocras Ab	
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus total number of tax	Is) — note that tails note that tails note that tails may lead to the tails may lead to	may be damaged be damaged during otera) dance of each ma Plecop	g sampling	P AI	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Protonemura Ab Perla Ab Dinocras Ab Other Plecop Ab	
Group 4 = G Group 5 = A Calculate the Chemeroptera: Total no. of taxa	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus total number of tax	Is) — note that tails note that tails note that tails may lead to the that tails may lead to the tails also tails also the tails also the tails also the tails also tails also the tails also ta	may be damaged during otera) dance of each ma Plecop 2 Total n	ocroinvertebrate gro	P AI	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Prefia Ab Dinocras Ab Other Plecop Ab ther Plecop Ab	nce
Group 4 = G Group 5 = A Calculate the Chemeroptera: Total no. of taxa	phemeroptera (3-tai lecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus total number of tax	Is) — note that tails not	may be damaged during otera) dance of each ma Plecop 2 Total n	o. of Taxa	COO	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Prefia Ab Dinocras Ab Other Plecop Ab ther Plecop Ab	nce
Group 4 = G Group 5 = A Calculate the Chemeroptera: Total no. of taxa	phemeroptera (3-tails) - ichoptera .OLD (Gastropoda, selius total number of tax Pai Eph 7 Total Reia Hydropsychida Polycentropodida	Is) — note that tails note that tails note that tails may lead to the tails may lead to	may be damaged durin otera) dance of each ma Plecop Total n Lymnae Potamopyrgu	o. of Taxa a (G) Ab as (G) Ab	And Committee of the Co	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Prefa Ab Dinocras Ab Other Plecop Ab ther Plecop Ab the Abundance Asellus Abse	nce
Group 4 = G Group 5 = A Calculate the Chemeroptera: Total no. of taxa	phemeroptera (3-tailecoptera (2-tails) - ichoptera OLD (Gastropoda, sellus total number of tax Pail Eph 7 Total Rela Hydropsychida Polycentropodida-	Is) — note that tails more than tails more than the ta	may be damaged during otera) dance of each ma Plecop Total n Lymnae Potamopyrgu Planorb	o, of Taxa a (G) Ab bs(G) Ab bs(G) Ab	Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Preria Ab Dinocras Ab Other Plecop Ab ther Plecop Ab ther Plecop Ab Feel Abundance Asellus Absel Few/Lou	nce
Group 4 = G Group 5 = A Calculate the Chemeroptera: Total no. of taxa	phemeroptera (3-tai lecoptera (2-tails) - richoptera OLD (Gastropoda, sellus total number of tax Pal Eph Total Rela Hydropsychida Polycentropodida Rhyacophill	Is) — note that tails note that tails note that tails may lead to the tails may lead to	amay be damaged during otera) dance of each ma Plecop Total n 1: Lymnae Potamopyrgu Planorb Ancylu	o. of Taxa a (G) Ab as (G) Ab as (G) Ab as (G) Ab	Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Dicranota (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Prefa Ab Dinocras Ab Other Plecop Ab ther Plecop Ab the Abundance Asellus Abse	nce
Group 4 = G Group 5 = A Calculate the Chemeroptera: Total no. of taxa	phemeroptera (3-tai lecoptera (2-tails) - richoptera OLD (Gastropoda, sellus total number of tax Pal Eph Total Rela Hydropsychida Philopotamida Limnephilida	Is) — note that tails note that tails note that tails note that tails may lead to the tails note that tails may lead to the tails note that tails not tail	may be damaged durin otera) dance of each ma Plecop 2 Total in D: Lymnae Potamopyrgu Planorb Ancylu Phys	o. of Taxa 2 a (G) Ab b (G) Ab b (G) Ab a (G) Ab	Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Peria Ab Dinocras Ab Other Plecop Ab ther Plecop Ab ther Plecop Ab There Abundance Asellus Absellus Common	nce
Group 4 = G Group 5 = A Calculate the Ephemeroptera: Total no. of taxa	phemeroptera (3-tailecoptera (2-tails) - inchoptera (2-tails) - inchoptera (DLD (Gastropoda, sellus - total number of tax - total number of tax - Eph - Total Rela - Hydropsychidaa - Rhyacophill - Philopotamida - Limnephilida - Sericostomatidai - Sericostomatidai	Is) — note that tails may lead to be a considerable of the tails of	may be damaged during the damaged da	o. of Taxa 2 a (G) Ab bs (G) Ab bs (G) Ab cs (G) Ab cs (G) Ab	Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab Ceratopogonidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Peria Ab Dinocras Ab Other Plecop Ab ther Plecop Ab ther Plecop Ab There Abundance Asellus Absellus Common	2
Group 4 = G Group 5 = A Calculate the Chemeroptera: Total no. of taxa	phemeroptera (3-tailecoptera (2-tails) - inchoptera OLLD (Gastropoda, sellus total number of tax Pal Eph 2 Total Rela Hydropsychida Polycentropodida Philopotamida Umnephilida Sericostomatidae Glossosomatidae	Is) — note that tails not tail tails not tails n	may be damaged durin otera) dance of each ma Plecop Total n Lymnae Potamopyrot Ancyt. Phys Lumbriculus Eisenielte	o. of Taxa o. of Taxa o. of Taxa o. of Ab os (G) Ab	Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Prela Ab Dinocras Ab Other Plecop Ab ther Plecop Ab re Abundance Asellus Abse Abse Note: A must be	2
Group 4 = G Group 5 = A Calculate the Ephemeroptera: Total no. of taxa	phemeroptera (3-tailecoptera (2-tails) - richoptera .OLD (Gastropoda, sellus rotal number of tax Pai Eph Total Rela Hydropsychida Polycentropodida Rhyacophili Philopotamidae Sericostomatidae Glossosomatidae Lepidostomatidae	Is) — note that tails note that tails note that tails may lo Oligochaeta and Dip and and relative abun Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerelia Ab Caenis Ab aleptophiebia Ab emera danica Ab Other Ephem Ab ative Abundance e Ab G.OL.I e Ab a Ab Le Ab Ab Le A	may be damaged during the damaged da	o. of Taxa o. of Taxa o. of Taxa o. of Ab os (G) Ab	Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab Ceratopogonidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Inphinemura Ab Dinocras Ab Other Plecop Ab ther Plecop Ab re Abundance Asellus Abse Asellus Norte: A must be recorded	2 2 2 V V V V S S Seellus as
Group 4 = G Group 5 = A Calculate the	phemeroptera (3-tailecoptera (2-tails) - inchoptera OLLD (Gastropoda, sellus total number of tax Pal Eph 2 Total Rela Hydropsychida Polycentropodida Philopotamida Umnephilida Sericostomatidae Glossosomatidae	Is) — note that tails may lead to be a considered and Dip to an and relative abundance and relative abundance and tail and the consistency of	may be damaged durin otera) dance of each ma Plecop Total n Lymnae Potamopyrot Ancyt. Phys Lumbriculus Eisenielte	o. of Taxa o. of Taxa o. of Taxa o. of Ab os (G) Ab	Chironomidae (D) Ab Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab Ceratopogonidae (D) Ab Other GOLD Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab Prela Ab Dinocras Ab Other Plecop Ab ther Plecop Ab re Abundance Asellus Abse Abse Note: A must be	2 2 2 2 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9

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.

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.



Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

Total Index Score (TIS) Sum (a+b+c+d+e) 22 Average Index Score (AIS) 4.4 Ssess the stream by comparing the final SSR score with the categories below and tick the appropriate box

> 7.25
Probably not at risk

> 6.5 – 7.25
Indeterminate
Stream may be at risk

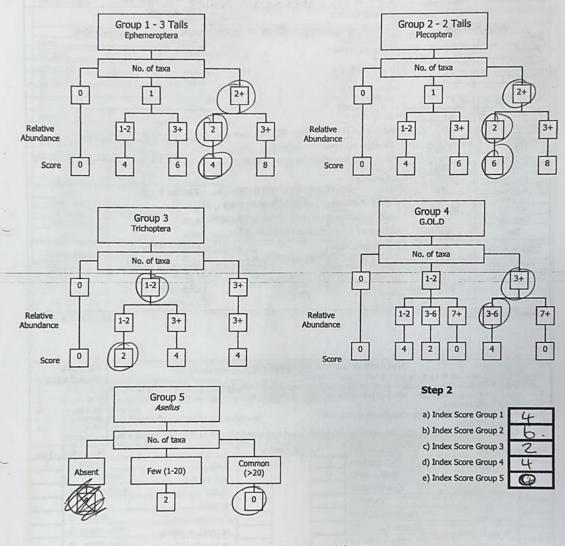
Stream at risk

Surveyor (signed): Kinc Grade Date: 21 102 1 2023

Station no.	N.	Location: DIC	Viluma	2113123 eman ws	To Grid (6 figure):		
		Stream Order:	KIPCO	evior vou	Stream flow:		
Field Ch	omichny	Modifications: Y/N	Couplined wild	anad bank avadan	Riffle		
DO%	eimsu y	arterial drainage	Canalised-wid	eneu-bank erosion-	Riffle/Glide		
DO mg/l		Dominant Types:			Slow flow	-	100
-		Bedrock					-
Temp (°C)		Boulder (>128mm)					
Conductivity		Cobble (32-128mm)	~				
pH		Gravel (8-32mm)				X CAT	
Bank width (cm)(4)	5.5-6	Fine Gravel (2-8mm)				T GALLES	
Wet width (am)		Sand (0.25-2mm)					
	5-5.2	Silt (<0.25mm)					
Avg Depth (cm)	1 400-500	Slope: Low - Mediu	m High - Ver	ry High		2	
Staff gauge		Geology: Calcareou	c-Silicague-Miv	ad	Shading: High Mod	lerate – Low - N	one
Velocity	Colour						2001020
Torrential	None	Substratum Condi	tion: Calcareo	us-Compacted-	Cattle access Y: upst	ream – downstr	eam or
Fast	Slight	Loose - Normal			1		
Moderate	Moderate	Substratum:	he battam Med	our stones			
Slow	High	Stoney bottom-Mudd	-		Photo: Y N		
Very slow	Diechanne	Degree of siltation	: Clean-Slight-	Moderate-Heavy			
Very dear	Discharge Flood	Depth of mud: Non	e: <1cm: 1-5c	m: 5-10cm: >10cm	E-mans		
All the part of the Control of the C			_		- FERNING		-
Clear	Normal	Litter: None Prese	ntj- Moderate	- Abundant			
(Slightly turbid)	Low	Filamentous Algae		1000	Sewage Fungus:		
		None (Present)- Mo			None - Present - Mode		
Highly turbid	Very Low	Main land use u/s:		Sample	Sampled in Minutes:		
	Dry	Pasture	Urban	retained:	Pond net x 2		
	Recent Flood	Bog	Tillage Other	Y/N	Stone wash x 2		
		Forestry	Other		Weed sweep x 2		
The macroinvertehra		Macroinvertebra the following 5 specific		sition		Relative	
		ls) - note that tails may		during sampling		1-5	
Group 2 = Pl	ecoptera (2-tails) - r	note that talls may be o	lamaged during	g sampling			100000000000000000000000000000000000000
Group 3 = Ti						6-20	1
	.OL.D (Gastropoda,	Oligochaeta and Dipter					1
Group 5 = A			a)			6-20 21-50 51-100	1 2 3
Calculate the					n below (Abundance - A	6-20 21-50 51-100 101+	1 2 3
Ephemeroptera:		a and relative abundan	nce of each ma	croinvertebrate grou	p below: (Abundance – A	6-20 21-50 51-100 101+	1 2 3
		a and relative abundan		croinvertebrate grou	p below: (Abundance – A	6-20 21-50 51-100 101+	1 2 3
		a and relative abundan Ecdyonurus Ab Rhithrogena Ab	nce of each ma	croinvertebrate grou	ALLE MERCHES PROPERTY AND ADDRESS PROPERTY AND ADDRESS PROPERTY AND ADDRESS AN	6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab	1 2 3
		a and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab	nce of each ma	croinvertebrate grou	F	b) 6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab	3
G Mari		a and relative abundan Ecdyonurus Ab Rhithrogena Ab	nce of each ma	croinvertebrate grou	F	6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab	1 2 3
		a and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab	nce of each ma	croinvertebrate grou	F	b) 6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab	1 2 3
	total number of tax	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab	nce of each ma	croinvertebrate grou	F	b) 6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab Protonemura Ab mphinemura Ab	3
G land	total number of tax	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophlebia Ab	nce of each ma	croinvertebrate grou	F At	6-20 21-50 51-100 101+ Leuctra Ab Isopería Ab Protonemura Ab mphinemura Ab Pería Ab Dinocras Ab	3
5	total number of tax	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab	nce of each ma	croinvertebrate grou	F Ar	6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab mphinemura Ab Peria Ab Dinocras Ab other Plecop Ab	3
G Inn	total number of tax	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophlebia Ab	nce of each ma	croinvertebrate grou	F Ar	6-20 21-50 51-100 101+ Leuctra Ab Isopería Ab Protonemura Ab mphinemura Ab Pería Ab Dinocras Ab	3
G rank	Para Ephe	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophlebia Ab emera danica Ab	Plecopi	croinvertebrate grou	F AI	6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Protonemura Ab mphinemura Ab Peria Ab Dinocras Ab other Plecop Ab	3
Total no. of taxa	Para Ephe (a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophlebia Ab emera danica Ab Other Ephem Ab tive Abundance 2	Plecopi	croinvertebrate groutera:	F AI	6-20 21-50 51-100 101+ Leuctra Ab Isopería Ab Portonemura Ab mphinemura Ab Pería Ab Dinocras Ab other Plecop Ab	
Total no. of taxa	Para Ephe () Total Relai Hydropsychidae	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophlebia Ab emera danica Ab Other Ephem Ab tive Abundance Ab G.O.L.D:	Plecopi	croinvertebrate groutera:	And Company of the Co	6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Portonemura Ab mphinemura Ab Perla Ab Dinocras Ab Other Plecop Ab ther Plecop Ab	1
Total no. of taxa	Para Ephe (Total Rela Hydropsychidae Polycentropodidae	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Caenis Ab aleptophlebia Ab emera danica Ab Other Ephem Ab tive Abundance Ab GOL.D:	Potamopyrgus	croinvertebrate groutera:	And Company of the Co	6-20 21-50 51-100 101+ Leuctra Ab Isopería Ab Portonemura Ab mphinemura Ab Pería Ab Dinocras Ab ther Plecop Ab the Plecop Ab the Abundance Aselfus Absi	
Total no. of taxa	Para Ephe () Total Rela Hydropsychidae Polycentropodidae Rhyacophila	a and relative abundant Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophiebia Ab emera danica Ab Other Ephem Ab tive Abundance 2 Ab G.OL.D:	Planorbis	croinvertebrate groutera: b. of Taxa 2 a (G) Ab c (G) Ab	Control Relative Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Simuliidae (D) Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Peria Ab Dinocras Ab Dinocras Ab ther Plecop Ab ther Plecop Ab Feellus Absellus Few/Lo	1 1 2 ent
Total no. of taxa	Para Ephe () Total Rela Hydropsychidae Polycentropodidae Rhyacophila Philopotamidae	a and relative abundant Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab Ab Ephemerella Ab Ephemerella Ab Ephemerel danica Ab Dother Ephem Ab Etive Abundance 2 Ab G.OL.D:	Total no Lymnaei Planorbis Ancylus	croinvertebrate groutera: D. of Taxa 2 G(G) Ab G(G) Ab G(G) Ab	Colimonomidae (D) Ab Chironomidae (D) Ab Simulidae (D) Ab Dicranota (D) Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Portonemura Ab Peria Ab Dinocras Ab Other Plecop Ab ther Plecop Ab ther Plecop Ab Fe Abundance Asellus Few/Lo Common	2 ent w
Total no. of taxa	Para Ephe Comment of tax Ephe C	a and relative abundar Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophiebia Ab emera danica Ab Other Ephem Ab tive Abundance Ab Ab Ab Ab Ab Ab	Plecopi Total nc Lymnaei Planorbii Ancylus Physic	croinvertebrate groutera: 2.0. of Taxa 2.2.2 (G) Ab 5.6 (G) Ab 5.6 (G) Ab 6.6 (G) Ab 6.	Coloronomidae (D) Ab Chironomidae (D) Ab Simulildae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Peria Ab Dinocras Ab Dinocras Ab ther Plecop Ab ther Plecop Ab Feellus Absellus Few/Lo	2 ent w
Total no. of taxa	Para Ephe Total Rela Hydropsychidae Rhyacophila Philopotamidae Limnephilidae Sericostomatidae	a and relative abundar Ecdyonurus Ab Rhitirogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophiebia Ab emera danica Ab Other Ephem Ab EAB Ab Ab Ab	Total no Lymnaeu Planorbis Ancylus Physic Lumbriculus	croinvertebrate groutera: 2. a (G) Ab (G) A	Color Total Relativ Chironomidae (D) Ab Chironomus (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab Ceratopogonidae (D) Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Protanemura Ab Perla Ab Dinocras Ab Other Plecop Ab ther Plecop Ab ther Plecop Ab Tew/Lo Common Numerou	2 w W V V is
Total no. of taxa	Para Ephe Comment of tax Ephe C	a and relative abundar Ecdyonurus Ab Rhitirogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophiebia Ab emera danica Ab Other Ephem Ab EAB Ab Ab Ab	Total no Lymnae Potamopyrgus Panorbis Ancylus Physa Lumbriculus Eiseniella	croinvertebrate groutera: 2. o. of Taxa 2. o(G) Ab 5. o(G) Ab 5. o(G) Ab 5. o(G) Ab 6.	Coloronomidae (D) Ab Chironomidae (D) Ab Simulildae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Perla Ab Dinocras Ab Other Plecop Ab ther Plecop Ab Few/Lo Common Numerou Numerou NoTE: A	2 2 w V V ss
Total no. of taxa	Para Ephe Total Rela Hydropsychidae Rhyacophila Philopotamidae Limnephilidae Sericostomatidae	Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab aleptophiebia Ab emera danica Ab Other Ephem Ab tive Abundance Ab Ab Ab Ab	Total no Lymnaeu Planorbis Ancylus Physic Lumbriculus	croinvertebrate groutera: 2. of Taxa 2. of G) Ab 5. of G) Ab 5. of G) Ab 5. of G) Ab 6. o	Color Total Relativ Chironomidae (D) Ab Chironomus (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab Ceratopogonidae (D) Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Portonemura Ab Peria Ab Dinocras Ab Other Plecop Ab Her Plecop Ab Few/Lo Common Numerou Numerou Numerou Numerou	1 2 3 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Total no. of taxa	Para Ephe () Total Rela Hydropsychidae Rhyacophila Philopotanidae Sericostomatidae Glossosomatidae Lepidostomatidae	Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab Ab Other Ephem Ab Etwa Abundance Ab GOL.D: Ab	Total no Lymnae Potamopyrgus Panorbis Ancylus Physa Lumbriculus Eiseniella	croinvertebrate groutera: 2. of Taxa 2. of G) Ab 5. of G) Ab 5. of G) Ab 5. of G) Ab 6. o	Color Total Relativ Chironomidae (D) Ab Chironomus (D) Ab Simuliidae (D) Ab Dicranota (D) Ab Tipulidae (D) Ab Ceratopogonidae (D) Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab Perla Ab Dinocras Ab Other Plecop Ab ther Plecop Ab ther Plecop Ab Nother Abundance Asellus Abs Nomerous Numerous Numerous Numerous Numerous	2
9	Para Ephe Total Rela Hydropsychidae Rhyacophila Philopotamidae Sericostomatidae Glossosomatidae Glossosomatidae	Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab Ab Other Ephem Ab Etwa Abundance Ab GOL.D: Ab	Total no Lymnae Potamopyrgus Panorbis Ancylus Physa Lumbriculus Eiseniella	croinvertebrate groutera: 2. of Taxa 2. of G Ab 5. of	Total Relativ Chironomidae (D) Ab Chironomidae (D) Ab Simullidae (D) Ab Dicranota (D) Ab Tirpulidae (D) Ab Ceratopogonidae (D) Ab Other GOLD Ab	6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Portonemura Ab Peria Ab Dinocras Ab Other Plecop Ab Her Plecop Ab Few/Lo Common Numerou Numerou Numerou Numerou	1 2 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5

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*.

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.



Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

Total Index Score (TIS)
Sum (a+b+c+d+e)

Average Index Score (AIS)
TIS/5 (5 for 5 groups)

Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box

> 7.25
Probably not at risk

Name (print):

K.M.C. Brick. Date: 21 102 12023