Annual Environmental Report

2021

Dromcollagher

D0316-01

CONTENTS

7 APPENDIX

7.1 SMALL STREAM RISK SCORE ASSESSMENT

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0316-01, Dromcollagher, in Limerick 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.

A new treatment plant is needed at this location in order to meet ELV limits.

1.2 TREATMENT SUMMARY

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

- DROMCOLLAGHER WWTP with a Plant Capacity PE of 400, 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
TPEFF1900D0316SW001	DROMCOLLAGHER WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l COD-Cr mg/l Suspended Solids mg/l Total Phosphorus (as P) mg/l

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
Small Stream Risk Score Assessment

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 DROMCOLLAGHER WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - DROMCOLLAGHER 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	12	8.00	2.46
COD-Cr mg/l	12	501	136
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	130	47
Total Nitrogen mg/l	12	44	20
Hydraulic Capacity	N/A	752	198

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is greater than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional ‘Operational Performance Summary’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF1900D0316SW001

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	3	N/A	73	Fail
Suspended Solids mg/l	35	87.5	N/A	12	7	1	32	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	4	1	17	Fail
pH units	9.00	9.00	N/A	12	N/A	N/A	7.57	Pass
Ammonia-Total (as N) mg/l	5.00	6.00	N/A	12	4	3	3.95	Fail
Total Phosphorus (as P) mg/l	1.00	1.20	N/A	12	8	8	2.12	Fail
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	12	N/A	N/A	1.54	
Total Nitrogen mg/l	N/A	N/A	N/A	11	N/A	N/A	12	

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):

Inadequate infrastructure.

Significance of Results:

BOD, COD TSS, Total P and ammonia failures. Plant is non-compliant

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1900D0316SW001

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	137921, 121475	RS24A020310	No	No	No	No	Bad
Downstream	137582, 121873	RS24A020400	No	No	No	No	Bad

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	RS24A020310	1.85	RS24A020400	4.65	1.50	186.2

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Ammonia-Total (as N) mg/l	RS24A020310	0.064	RS24A020400	1.41	0.065	2065.8
ortho-Phosphate (as P) - unspecified mg/l	RS24A020310	0.051	RS24A020400	0.655	0.035	1726
pH units	RS24A020310	7.83	RS24A020400	7.75	N/A	
Dissolved Oxygen % O2	RS24A020310	94	RS24A020400	81	N/A	
Temperature °C	RS24A020310	9.61	RS24A020400	10	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 BOD, ammonia, Ortho-P., concentrations downstream of the effluent discharge is noted.

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 - DROMCOLLAGHER WWTP

2.1.4.1 Treatment Efficiency Report - DROMCOLLAGHER 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	188	141	25
TN	1570	795	49
cBOD	3637	1150	68
COD	10429	4832	54
SS	N/A	2156	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 - DROMCOLLAGHER 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.

DROMCOLLAGHER WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	257
DWF to the Treatment Plant (m^3/day)	100
Current Hydraulic Loading - annual max (m^3/day)	752
Average Hydraulic loading to the Treatment Plant (m^3/day)	198
Organic Capacity (PE) - As Constructed	400
Organic Capacity (PE) - Collected Load (peak week)[Note1]	764
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 - DROMCOLLAGHER 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)
	Plant or equipment breakdown at WWTP	1	No	No
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No
Uncontrolled release	Adverse Weather	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	3
Number of Incidents reported to the EPA via EDEN in 2021	3
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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	137935, 121479	No	Low	Meeting	Unknown	Unknown	Not Monitored
SW3	137932, 121480	Yes	Low	Meeting	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 sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
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/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0316-SIP:01	Additional treatment to meet the ELVs with commencement date 31/12/2021	C	31/12/2021	No	At Planning Stage		Feasibility study and concept design being undertaken
D0316-SIP:02	Installation of interim (package) secondary treatment plant	C	31/12/2015	Yes	At Planning Stage		Options assessment being undertaken to agree scope

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 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	Year included in AER	Included in this AER
Priority Substances Assessment	Yes	2016	No
Small Stream Risk Score Assessment	Yes	2019	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
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	Yes
List reason e.g. changes to monitoring requirements	ambient monitoring location changes.
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

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

Signed: Date: 11/05/2022

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 - Small Stream Risk Score Assessment

River: Ahavaleagh Stream	Code:	Date: 09-06 21	Time: 10:00
Station no.	**Location:** upstream Dromcollogher		**Grid (6 figure):**
	Stream Order: 2nd Order.		**Stream flow:** Riffle ✓ Riffle/Glide Slow flow

Field Chemistry	
DO%	79
DO mg/l	6.92
Temp (°C)	14.0
Conductivity	241
pH	7.6
Bank width (cm)	400
Wet width (cm)	150
Avg Depth (cm)	30
Staff gauge	NO
Velocity	**Colour**
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	
Clarity	**Discharge**
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Cobble (32-128mm)
Gravel (8-32mm) ✓
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum:
Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None <1cm: 1-5cm: 5-10cm: >10cm

Litter: None – Present – Moderate - Abundant

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Filamentous Algae:
None – Present – Moderate - Abundant

Sewage Fungus:
None – Present – Moderate - Abundant

Main land use u/s:
Pasture — Urban
Bog — Tillage
Forestry — Other

Sample retained: Y / N

Sampled in Minutes:
Pond net x 2
Stone wash x 1
Weed sweep x 30 sec.

General Comments:

OR.

Macroinvertebrate Composition

The macroinvertebrates are divided into the following 5 specific groups:

- Group 1 = Ephemeroptera (3-tails) – note that tails may be damaged during sampling
- Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling
- Group 3 = Trichoptera
- Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera)
- Group 5 = *Asellus*
- Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance – Ab)

Relative Abundance	
1-5	1
6-20	2
21-50	3
51-100	4
101+	5

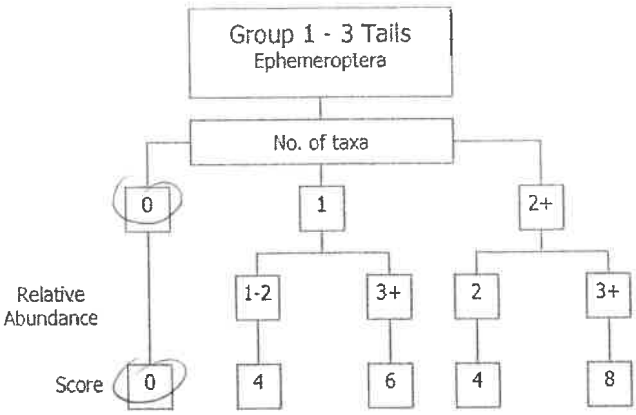
Ephemeroptera:		**Plecoptera:**	
Ecdyonurus Ab		*Leuctra* Ab	
Rhithrogena Ab		*Isoperla* Ab	
Heptagenia Ab		*Protonemura* Ab	
Ephemerella Ab		*Amphinemura* Ab	
Caenis Ab		*Perla* Ab	
Paraleptophlebia Ab		*Dinocras* Ab	
Ephemera danica Ab		Other Plecop Ab	
Other Ephem Ab		Other Plecop Ab	
Total no. of taxa	0	**Total Relative Abundance**	0
Total no. of Taxa	0	**Total Relative Abundance**	0

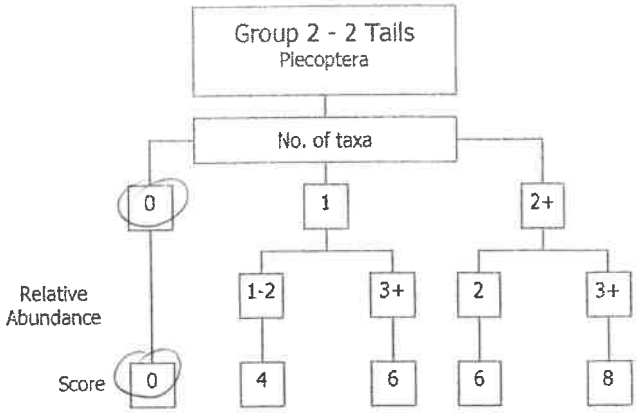
Trichoptera:		**G.OL.D:**				**Asellus:**	
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab			
Polycentropodidae Ab		*Potamopyrgus* (G) Ab		*Chironomus* (D) Ab	2	Absent	
Rhyacophila Ab		*Planorbis* (G) Ab		Simuliidae (D) Ab	2	Few/Low	✓
Philopotamidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab		Common/ Numerous	
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab			
Sericostomatidae Ab		*Lumbriculus* (Ol) Ab		Ceratopogonidae (D) Ab			
Glossosomatidae Ab		*Eiseniella* (Ol) Ab		Other GOLD Ab			
Lepidostomatidae Ab		Tubificidae (Ol) Ab					
Other Trichoptera Ab							
Total no. of Taxa	0	**Total Relative Abundance**	0	**Total no. of Taxa**	2	**Total Relative Abundance**	4

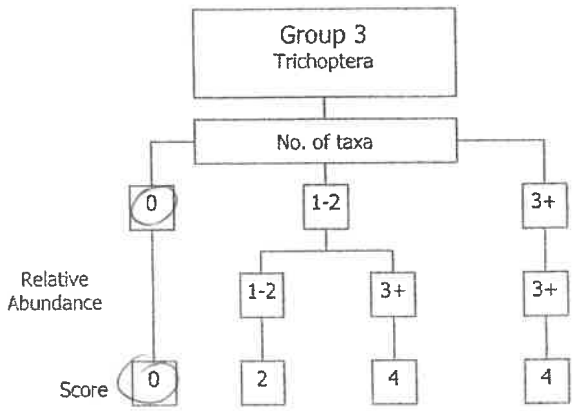
NOTE: *Asellus* must be recorded as absent if none are found

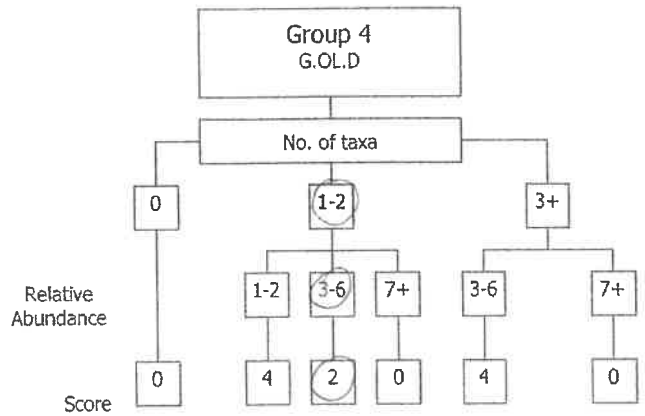
NOTE *Baetis* is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that *Baetis* is not counted in SSRS. See Appendix B for more details on how to identify *Baetis*.

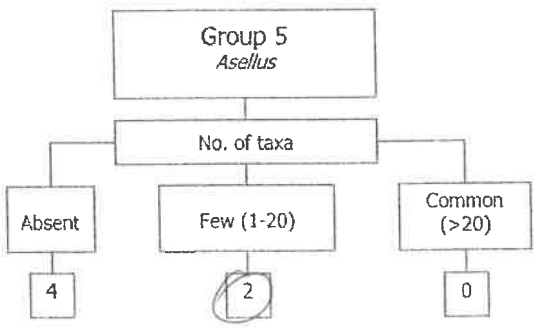
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from ***each macroinvertebrate group*** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.











Step 2

a) Index Score Group 1	0
b) Index Score Group 2	0
c) Index Score Group 3	0
d) Index Score Group 4	2
e) Index Score Group 5	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)	4	Average Index Score (AIS) TIS/5 (5 for 5 groups)	0.8	**SSR Score** (AIS x 2)	1.6

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	☐	> 6.5 – 7.25 Indeterminate Stream may be at risk	☐	<6.5 Stream at risk	✓

Surveyor (signed): A. Insley Name (print): ADRIAN INSLEY Date: 09 / 06 / '21

River: Ahavarragh Stream | **Code:** | **Date:** 09-06-21 | **Time:** 10:50.

Station no.

Location: Downstream Dromcollogher

Stream Order: 2nd Order.

Grid (6 figure):

Field Chemistry	
DO%	51
DO mg/l	4.2
Temp (°C)	14.1
Conductivity	215
pH	7.7
Bank width (cm)	400
Wet width (cm)	150
Avg Depth (cm)	30
Staff gauge	No
Velocity	**Colour**
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	
Clarity	**Discharge**
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Cobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum: Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None-<1cm: 1-5cm: 5-10cm: >10cm

Litter: None – Present – Moderate - Abundant

Filamentous Algae:
None – Present – Moderate - Abundant

Main land use u/s:
Pasture
Bog
Forestry
Urban
Tillage
Other

Sample retained: Y / N

Stream flow:
Riffle
Riffle/Glide ✓
Slow flow

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Sewage Fungus:
None – Present – Moderate - Abundant

Sampled in Minutes:
Pond net x 2
Stone wash x 1
Weed sweep x 0.

General Comments: Strong smell, of duck poo, and sewage.

Macroinvertebrate Composition

The macroinvertebrates are divided into the following 5 specific groups:

- Group 1 = Ephemeroptera (3-tails) – note that tails may be damaged during sampling
- Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling
- Group 3 = Trichoptera
- Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera)
- Group 5 = *Asellus*
- Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance – Ab)

Relative Abundance	
1-5	1
6-20	2
21-50	3
51-100	4
101+	5

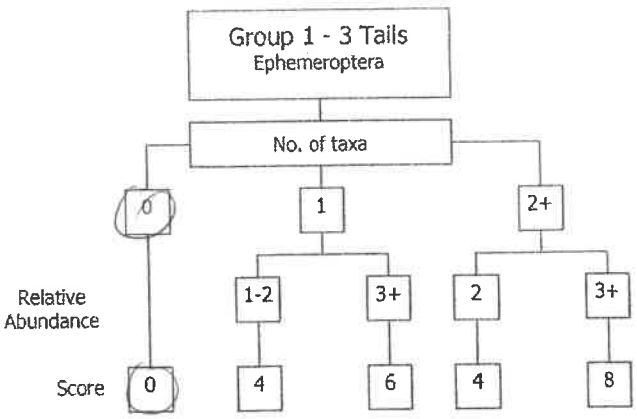
Ephemeroptera:		**Plecoptera:**	
Ecdyonurus Ab		*Leuctra* Ab	
Rhithrogena Ab		*Isoperla* Ab	
Heptagenia Ab		*Protonemura* Ab	
Ephemerella Ab		*Amphinemura* Ab	
Caenis Ab		*Perla* Ab	
Paraleptophlebia Ab		*Dinocras* Ab	
Ephemera danica Ab		Other Plecop Ab	
Other Ephem Ab		Other Plecop Ab	
Total no. of taxa	0	**Total Relative Abundance**	0
Total no. of Taxa	0	**Total Relative Abundance**	0

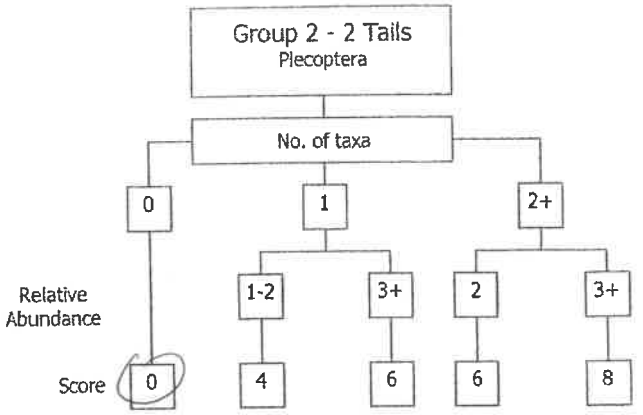
Trichoptera:		**G.OL.D:**				**Asellus:**	
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab		Absent	
Polycentropodidae Ab		*Potamopyrgus* (G) Ab		*Chironomus* (D) Ab	2	Few/Low	
Rhyacophila Ab		*Planorbis* (G) Ab		Simuliidae (D) Ab		Common/ Numerous	✓
Philopotamidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab			
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab			
Sericostomatidae Ab		*Lumbriculus* (Ol) Ab		Ceratopogonidae (D) Ab			
Glossosomatidae Ab		*Eiseniella* (Ol) Ab		Other GOLD Ab			
Lepidostomatidae Ab		Tubificidae (Ol) Ab					
Other Trichoptera Ab							
Total no. of Taxa	0	**Total Relative Abundance**	0	**Total no. of Taxa**	1	**Total Relative Abundance**	2

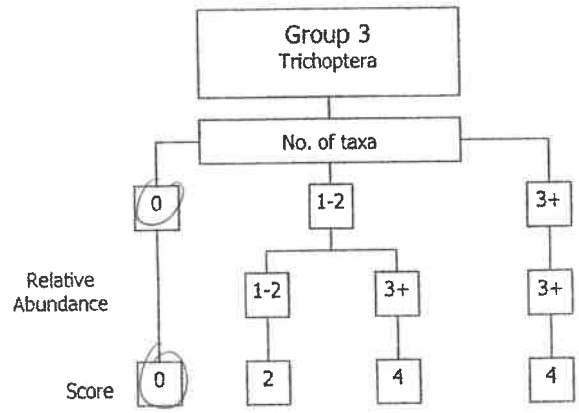
NOTE: *Asellus* must be recorded as absent if none are found

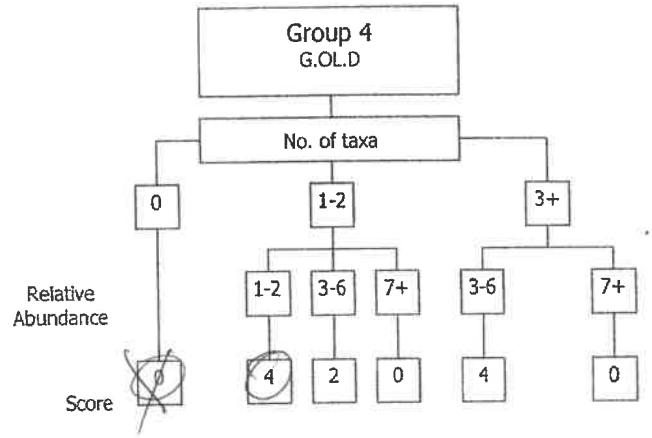
NOTE *Baetis* is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that *Baetis* is not counted in SSRS. See Appendix B for more details on how to identify *Baetis*.

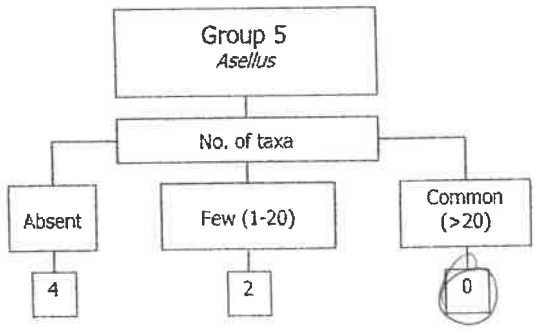
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from ***each macroinvertebrate group*** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.











Step 2

a) Index Score Group 1	0
b) Index Score Group 2	0
c) Index Score Group 3	0
d) Index Score Group 4	4
e) Index Score Group 5	0

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)	4	Average Index Score (AIS) TIS/5 (5 for 5 groups)	0.8	**SSR Score** (AIS x 2)	1.6

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		> 6.5 – 7.25 Indeterminate Stream may be at risk		<6.5 Stream at risk	✓

Surveyor (signed): A. Insley Name (print): ADRIAN INSLEY Date: 09 / 06 / 21