# Annual Environmental Report

# 2024

Tyrellspass

D0099-01

## CONTENTS

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0099-01, Tyrellspass, in Westmeath 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)

- Tyrellspass 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 |
|---|---|---|---|---|
| **TPEFF3200D0099SW001** | Tyrellspass WWTP | Treated | Non-Compliant | Ammonia-Total (as N) mg/l |

## 1.4 LICENCE SPECIFIC REPORTING

| Assessment / Report |
| --- |
| **There are no Licence Specific Reports included in this AER.** |

# 2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

## 2.1 TYRELLSPASS WWTP - TREATED DISCHARGE

### 2.1.1 INFLUENT MONITORING SUMMARY - TYRELLSPASS 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 |
|---|---|---|---|
| **Ammonia-Total (as N) mg/l** | 12 | 73 | 34 |
| **ortho-Phosphate (as P) - unspecified mg/l** | 12 | 9.60 | 5.7 |
| **BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l** | 12 | 503 | 229 |
| **Suspended Solids mg/l** | 12 | 1370 | 317 |
| **pH pH units** | 12 | 8.10 | 7.55 |
| **COD-Cr mg/l** | 12 | 1330 | 635 |
| **Total Nitrogen mg/l** | 12 | 91 | 53 |
| **Total Phosphorus (as P) mg/l** | 12 | 23 | 8.8 |
| **Hydraulic Capacity** | N/A | 756 | 229 |

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'.

## 2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF3200D0099SW001

| Parameter | WWDL ELV (Schedule A) | ELV with Condition 2 Interpretation included Note 1 | Interim % reduction from influent concentration | Number of sample results | Number of exceedances | Number of exceedances with Condition 2 Interpretation included | Annual Mean | Overall Compliance (Pass/Fail) |
|---|---|---|---|---|---|---|---|---|
| **COD-Cr mg/l** | 125 | 250 | N/A | 12 | N/A | N/A | 19.42 | Pass |
| **Suspended Solids mg/l** | 35 | 87.5 | N/A | 12 | N/A | N/A | 7.50 | Pass |
| **pH pH units** | 6 | 9 | N/A | 12 | N/A | N/A | 7.47 | Pass |
| **BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l** | 8 | 16 | N/A | 12 | N/A | N/A | 1.88 | Pass |
| **Ammonia-Total (as N) mg/l** | 0.5 | 1 | N/A | 12 | 2 | 2 | 0.35 | Fail |
| **ortho-Phosphate (as P) - unspecified mg/l** | 0.26 | 0.52 | N/A | 12 | 2 | N/A | 0.19 | Pass |
| **Nitrate (as N) mg/l** | N/A | N/A | N/A | 12 | N/A | N/A | 15.63 | |
| **Nitrite (as N) mg/l** | N/A | N/A | N/A | 12 | N/A | N/A | 0.209 | |

| 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) |
|---|---|---|---|---|---|---|---|---|
| **Conductivity @20°C µS/cm** | N/A | N/A | N/A | 12 | N/A | N/A | 720 | |
| **Total Phosphorus (as P) mg/l** | N/A | N/A | N/A | 12 | N/A | N/A | 0.31 | |
| **Total Nitrogen mg/l** | N/A | N/A | N/A | 12 | N/A | N/A | 16.86 | |
| **Total Oxidised Nitrogen (as N) mg/l** | N/A | N/A | N/A | 12 | N/A | N/A | 15.71 | |

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):

**WWTP biological sludge issue.**

## Significance of Results:

The WWTP is non compliant with the ELV's set in the Wastewater Discharge Licence. The impact on receiving waters is assessed further in Section 2.

## 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF3200D0099SW001

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** | 240896, 238378 | RS25T070150 | No | No | No | No | Moderate |
| **Downstream** | 238455, 239453 | RS25T070680 | No | No | No | 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** | RS25T070150 | 0.749 | RS25T070680 | 1.22 | 1.50 | 31.4 |
| **Ammonia-Total (as N) mg/l** | RS25T070150 | 0.025 | RS25T070680 | 0.035 | 0.065 | 15.5 |
| **ortho-Phosphate (as P) - unspecified mg/l** | RS25T070150 | 0.007 | RS25T070680 | 0.007 | 0.035 | 0 |
| **Dissolved Oxygen mg/l** | RS25T070150 | 9.24 | RS25T070680 | 9.34 | 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 |
|---|---|---|---|---|---|---|
| **Total Phosphorus (as P) mg/l** | RS25T070150 | 0.040 | RS25T070680 | 0.075 | N/A | |
| **pH pH units** | RS25T070150 | 7.89 | RS25T070680 | 7.93 | N/A | |
| **Dissolved Oxygen % O2** | RS25T070150 | 78 | RS25T070680 | 78 | N/A | |
| **Dissolved Oxygen % Saturation** | RS25T070150 | 88 | RS25T070680 | 89 | N/A | |
| **Temperature °C** | RS25T070150 | 9.96 | RS25T070680 | 10 | N/A | |
| **Total Nitrogen mg/l** | RS25T070150 | 2.91 | RS25T070680 | 2.61 | N/A | |
| **Conductivity @20°C µS/cm** | RS25T070150 | 663 | RS25T070680 | 624 | N/A | |
| **COD-Cr mg/l** | RS25T070150 | 14 | RS25T070680 | 25 | N/A | |

## Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: Ammonia-Total (as N) mg/l.

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 BOD & Ammonia 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.

As per the 3rd Cycle Lower Shannon (Brosna) Catchment Report (HA 25A), Agriculture is a significant pressures on the At Risk Brosna_050 waterbody.

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 - TYRELLSPASS WWTP

### *2.1.4.1 Treatment Efficiency Report - Tyrellspass 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** | 19156 | 157 | 99 |
| **COD** | 53050 | 1624 | 97 |
| **SS** | 26472 | 627 | 98 |
| **TN** | 4447 | 1409 | 68 |
| **TP** | 734 | 26 | 97 |

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

### 2.1.4.2 Treatment Capacity Report Summary - Tyrellspass 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.

| Tyrellspass WWTP | |
|---|---|
| **Peak Hydraulic Capacity ($m^3$/day) - As Constructed** | 1350 |
| **DWF to the Treatment Plant ($m^3$/day)** | 450 |
| **Current Hydraulic Loading - annual max ($m^3$/day)** | 756 |
| **Average Hydraulic loading to the Treatment Plant ($m^3$/day)** | 229 |
| **Organic Capacity (PE) - As Constructed** | 2000 |
| **Organic Capacity (PE) - Collected Load (peak week)**[Note1] | 564 |
| **Organic Capacity (PE) - Remaining** | 1436 |
| **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 - TYRELLSPASS 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) |
|---|---|---|---|
| **Abatement equipment off-line** | Adverse Weather | No | Yes |
| **Uncontrolled release** | Adverse Weather | No | Yes |
| **Breach of ELV** | WWTP biological sludge issue | Yes | No |

## 3.2.2 SUMMARY OF OVERALL INCIDENTS

| Question | Answer |
|---|---|
| **Number of Incidents in 2024** | 3 |
| **Number of Incidents reported to the EPA via EDEN in 2024** | 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 2024 (No. of events) | Total volume discharged in 2024 ($m^3$) | Monitoring Status |
|---|---|---|---|---|---|---|---|
| **SW2** | 240821, 238268 | Yes | Low Significance | Meeting Criteria | Unknown | Unknown | Not 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 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 ($m^3$)?** | 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?** | 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 |
|---|---|---|---|---|---|---|---|
| **D0099-SIP:01** | Waste Water treatment plant and ancillary works | C | 01/12/2014 | 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 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 |
|---|---|---|
| **D0099-01-Priority Substances Assessment** | Yes | No |
| **D0099-01-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** | 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:

Date: 15/04/2025

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** |

# SSRS Compliance Monitoring: *Tyrrellspass* Waste Water Treatment Plant 2024


**Report to Uisce Éireann**

**Limnos Consultancy, January 2025**

# Contents

# Tyrrellspass WWTP

## Introduction

Small Streams Risk Score (SSRS) assessments on the Tyrrellspass Stream upstream and downstream of the Tyrrellspass waste water treatment plant (WWTP) are outlined in this report. The assessments were made on 10 October 2024. Limnos Consultancy was contracted by Irish Water to undertake the surveys.

## Methodology

### Small Streams Risk Score (SSRS)

Samples were taken using an ISO compliant kick-sampling method compatible with the Environmental Protection Agency (EPA) Standard Operating Procedure for sampling aquatic macroinvertebrates. Samples were taken upstream and downstream of the discharge from the WWTP. SSRS results were assigned based on the macroinvertebrate fauna.

The author was the main initiator of the SSRS system developed by the Western River Basin District and the EPA under his supervision in 2005–2006 (McGarrigle 2014). He has undertaken SSRS training of local authority and other professional staff at the Local Government Water Services Training Centres around the country for over 100 personnel.

The SSRS was calculated based on selected sub-groups of the macroinvertebrates recorded. The score is calculated based on the number of taxa and their relative abundance in four main invertebrate groups as follows:

Group 1: Ephemeroptera (excluding *Baetis rhodani*)
Group 2: Plecoptera
Group 3: Trichoptera
Group 4: GOlD (Gastropoda, Oligochaeta, Diptera)
Group 5: *Asellus*

The first three groups above, mayflies, stoneflies, and caddis flies, are regarded as pollution-sensitive whereas gastropods, oligochaetes, dipterans and *Asellus* are relatively pollution-tolerant. The maximum score that can be achieved is

11.2 and threshold scores deciding the degree of risk of not being at good ecological status are as follows:

> 7.25 Probably not at risk
- > 6.5 to 7.25 Indeterminate
< 6.5 Stream may be at risk.

Samples were taken with a standard 1 mm mesh pond net. A 3-minute kick sample was combined with a 1-minute stonewash. Samples were placed on a white tray and, once cleaned of debris such as leaves and twigs and excessive sand or gravel by decanting and hand picking, the sample was examined carefully to identify the macroinvertebrates. At least 25 minutes were spent identifying and assigning each taxon found to a relative abundance category. Table 1 gives the definition of the relative abundance terms Few, Common, Numerous, Dominant and Excessive. The numeric code is used in the results tables below.

***Table 1. Relative abundance table.***

| Abundance | Number of Individual Specimens | Relative abundance numeric code |
|---|---|---|
| Few: | 1 to 5 individuals | 1 |
| Common: | 6 to 20 | 2 |
| Numerous: | 21–50 | 3 |
| Dominant: | 51 to 100 | 4 |
| Excessive: | >100 | 5 |

## Physico-Chemical Measurements

Physico-chemical measurements were also made for dissolved oxygen, temperature and conductivity using a HACH HQ40d meter with appropriate compatible probes. Probes were calibrated before use.

## Location of Sites Sampled

Figure 1 maps the sampling sites and Table 2 gives the details of the locations sampled.

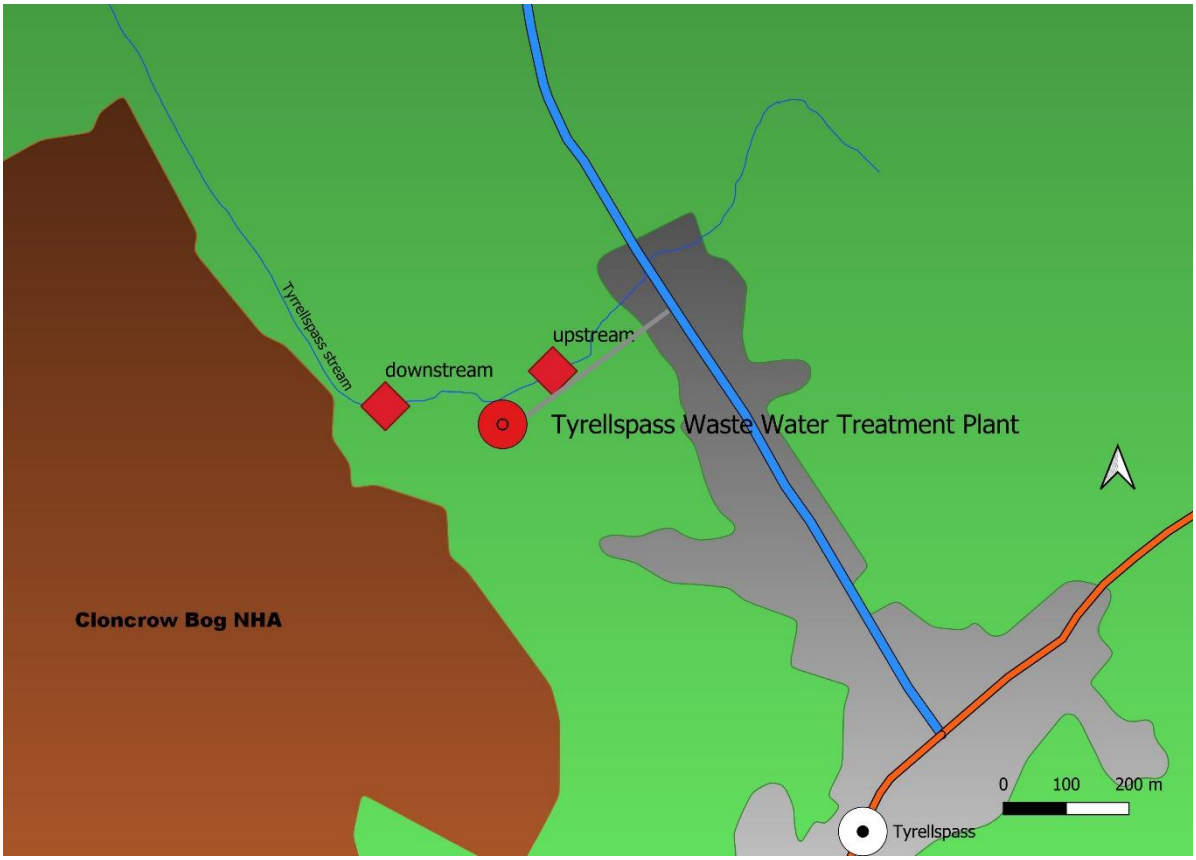


*Figure 1. Location of upstream and downstream monitoring sites for Tyrrellspass WWTP. The river flows East to West.*

*Table 2. Location of sites sampled upstream and downstream of Tyrrellspass WWTP.*

| Location | Tyrrellspass WWTP Upstream | Tyrrellspass WWTP Downstream |
|---|---|---|
| **EPA Code** | RS25T070150 | RS25T070200 |
| **Station** | Upstream of WWTP | Downstream of WWTP |
| **River** | Tyrrellspass Stream | Tyrrellspass Stream |
| **Easting** | 240897 | 240629 |
| **Northing** | 238378 | 238322 |

# Results

## Site Photographs

Figure 2 shows photographs for the upstream and downstream of the Tyrrellspass WWTP. The upstream site is at the opening of a culvert and the downstream site is quite shaded with muddy substratum.

U/S Tyrrellspass WWTP looking downstream

U/S Tyrrellspass WWTP looking upstream

D/S Tyrrellspass WWTP looking downstream

D/S Tyrrellspass WWTP looking upstream

***Figure 2. Upstream (U/S) and downstream (D/S) of Tyrrellspass WWTP.***

## Macroinvertebrates – SSRS

Table 3 gives the recorded macroinvertebrate taxa for the standard kick samples taken at these sites.

The taxa are ordered from top to bottom in terms of their SSRS Grouping. Groups 1 to 3 are sensitive to pollution while Groups 4 and 5 comprise more tolerant taxa. Note that not all taxa recorded are included in the SSRS system.

The upstream site is at the emergence of a culverted section of the stream and is close to the source. The substratum is highly calcareous. Some 18 taxa were recorded at this site, up from 14 in 2023. No Ephemeroptera were found but a stonefly, *Leuctra*, was present. There were three Trichoptera: Philopotamidae, *Polycentropus* and *Sericostoma personatum,* which are also taken as a positive sign. There were five GOlD taxa all at low abundance. The black fly larvae Simuliidae were 'Few' but were 'Numerous' in October 2023. *Asellus* was, however, quite abundant, but not dominant as it was in October 2023. Unusually, flatworms (Planaria) were the dominant type in the sample. The SSRS of 4.0 puts the site at risk. A Q-Value of Q3 takes the nature of the substratum and upstream culverting into account – at face value it is closer to Q2-3 due to the abundance of *Asellus* in particular.

The downstream site is in a shaded muddy stretch. It had 15 taxa – up from 13 in 2023. No Ephemeroptera or Plecoptera were noted. There were, however, three Trichoptera: Limnephilidae*, Polycentropus* and *Sericostoma personatum*. Four GOlD taxa were recorded including non-biting midge larvae, Chironomidae, which were common. *Asellus* was, however, dominant as also it was in October 2023. The 'At Risk' SSRS of 3.2 is the same as it was in October 2023. The Q-Value of Q3 is somewhat tentative due to the nature of the substratum and the high degree of shade – ideally a fast-flowing riffle section would give a better assessment of the impact of the WWTP discharge. The EPA's biological monitoring programme for rivers does not include the Tyrrellspass Stream.

***Table 3. Relative abundances of macroinvertebrates recorded upstream and downstream of Tyrrellspass WWTP discharge point.***

| | | | **Upstream Tyrrellspass WWTP** | **Downstream Tyrrellspass WWTP** |
|---|---|---|---|---|
| | | **River** | **Tyrrellspass Stream** | |
| | | **Code** | **25T070150** | **25T070200** |
| | | **Location** | **Upstream Tyrrellspass WWTP** | **Downstream Tyrrellspass WWTP** |
| | | **Date of Sample** | **10/10/2024** | **10/10/2024** |
| **SSRS Group** | | **Taxon** | | |
| 2 | Plecop | *Leuctra* | Few | - |
| 3 | Trich | Limnephilidae | - | Few |
| 3 | TRICH | Philopotamidae | Common | - |
| 3 | Trich | *Polycentropus* | Few | Few |
| 3 | Trich | *Sericostoma personatum* | Few | Few |
| 4 | GOlD | Ancylidae | - | Few |
| 4 | GOlD | Ceratopogonidae | - | Few |
| 4 | GOlD | Chironomidae | Few | Common |
| 4 | GOlD | *Eiseniella* | Few | - |
| 4 | GOlD | *Lymnaea peregra* | Few | - |
| 4 | GOlD | Simuliidae | Few | - |
| 4 | GOlD | Tubificidae | Few | Few |
| 5 | Asellus | *Asellus aquaticus* | Numerous | Dominant |
| | n/a | *Baetis rhodani* | Few | - |
| | n/a | *Elmis aenea* | Few | Few |
| | n/a | *Gammarus* | Common | Few |
| | n/a | Gerridae | - | Few |
| | n/a | Haliplidae | Few | - |
| | n/a | Hydrachnidae | Few | Common |
| | n/a | *Limnius volckmari* | Few | Few |
| | n/a | *Piscicola* | Few | - |
| | n/a | Planaria | Dominant | Common |
| | n/a | Sphaeriidae | - | Common |
| | | | | |
| | | **Number Taxa** | **18** | **15** |
| | | **SSRS** | **4.0** | **3.2** |
| | | **Q-Value** | **Q3** | **Q3** |

### Physico-Chemical Results

The physico-chemical measurements made in the field on the day of sampling are shown in Table 4. The dissolved oxygen saturation of 94.2% at the upstream site is significantly better than the 85.5% value recorded there in October 2023. The downstream saturation value of 77.4% is lower than the 84.4% recorded there in 2023. The difference suggests that there may be an impact from the WWTP on the stream. The high conductivity and pH values are taken as being due to the geology of the catchment giving rise to very hard water.

***Table 4. Physico-chemical results for Tyrrellspass River, 10 October 2024.***

| Station | Dissolved Oxygen (DO) % Saturation | DO mg/l | Temp. °C | Conductivity µS/cm | pH |
|---|---|---|---|---|---|
| Upstream Tyrrellspass WWTP | 94.2 | 10.22 | 11.30 | 757 | 8.04 |
| Downstream Tyrrellspass WWTP | 77.4 | 8.55 | 11.50 | 762 | 7.98 |

## Summary

This small stream is apparently impacted both upstream and downstream of the WWTP discharge. Cattle access to the stream close to the downstream site may be adding a pressure. The muddy nature of the substratum there suggests silt runoff from the adjacent and upstream fields.

## Reference

McGarrigle, M. 2014. “Assessment of Small Water Bodies in Ireland.” *Biology and Environment* 114B(3). doi: 10.3318/BIOE.2014.15.