# Annual Environmental Report

# 2018


Monaghan

D0061-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0061-01, Monaghan, in Monaghan in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports are included as an appendix to the AER as follows:

## 1.1 Licence specific reporting included in AER

| Assessment / Report | Included in AER |
|---|---|
| **There is no Licence Specific Reports included in the AER.** | |

## 1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant MONAGHAN WWTP with a Plant Capacity PE of 37400. The treatment process includes the following:

### 1.2.1 MONAGHAN WWTP

| Treatment type | Yes / No | Details |
|---|---|---|
| **Preliminary Treatment** | Yes | Screening |
| **Primary Treatment** | Yes | Settlement |
| **Secondary Treatment** | Yes | Aeration |
| **Nutrient Removal** | Yes | Chemical dosing for phosphorus removal |
| **Tertiary Treatment** | No | |

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 2.2 Discharges from the agglomeration.

## 1.3 ELV Overview

### 1.3.1 MONAGHAN WWTP

| Compliance Status | |
|---|---|
| **Were all parameters compliant for MONAGHAN WWTP treatment plant** | No |
| **Where noncompliant see table 2.2.1 for details of parameters** | |

## 1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

| Treatment Plant | Sludge type | Quantity | Unit | % Dry Solids | Destination |
|---|---|---|---|---|---|
| **MONAGHAN WWTP** | Cake Sludge | 2758 | Weight (Tonnes) | 18 | Biocore |
| **MONAGHAN WWTP** | Cake Sludge | 317 | Weight (Tonnes) | 18 | Coranure, Evergreen Fields, M & T |
| **MONAGHAN WWTP** | Liquid Sludge | 10490 | Volume (m3) | 3 | Centrifuge on site |

### Annual Statement of Measures

Monaghan WWTP Import Works Upgrade The contract involves an upgrade to the existing inlet works for the delivery of water treatment sludges and landfill leachate and a new import facility for the receipt of primary wastewater sludges and domestic wastewater sludge for treatment within the plant. 90% Complete. Monaghan WWTP Aeration Upgrade Replacement of the existing aeration system with a new fine bubble diffused aeration system, incorporating new blowers, diffusers, pipework, kiosk, MCC panel and RAS pumps. 99% Complete

# 2 MONITORING REPORTS SUMMARY

## 2.1 Summary report on monthly influent monitoring

A summary of influent monitoring for the treatment plant is presented in below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

### 2.1.1 Influent Monitoring Summary - MONAGHAN WWTP

| Parameters | Number of Samples | Annual Max | Annual Mean |
|---|---|---|---|
| **COD-Cr mg/l** | 27 | 1279 | 592.79 |
| **BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l** | 27 | 500 | 194.68 |
| **Suspended Solids mg/l** | 27 | 1185 | 205.85 |
| **Total Nitrogen mg/l** | 27 | 108.9 | 50.23 |
| **Total Phosphorus (as P) mg/l** | 25 | 12 | 4.32 |
| **Hydraulic Capacity** | 0 | 14054 | 3862 |

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5 if applicable

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2.

## 2.2 Discharges from the agglomeration

### 2.2.1 Effluent Monitoring Summary - MONAGHAN WWTP

| 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) |
|---|---|---|---|---|---|---|---|---|
| **pH pH units** | 0 | 0 | 0 | 27 | 0 | 0 | 7.39 | Pass |
| **Suspended Solids mg/l** | 25 | 62.5 | 0 | 27 | 1 | 0 | 6.44 | Pass |
| **Total Phosphorus (as P) mg/l** | 2 | 2.4 | 0 | 27 | 2 | 1 | 0.52 | Fail |
| **Ammonia-Total (as N) mg/l** | 0 | 0 | 0 | 27 | 0 | 0 | 3.75 | Pass |
| **ortho-Phosphate (as P) - unspecified mg/l** | 0 | 0 | 0 | 27 | 0 | 0 | 0.33 | Pass |
| **Total Nitrogen mg/l** | 0 | 0 | 0 | 27 | 0 | 0 | 32.3 | Pass |
| **COD-Cr mg/l** | 125 | 250 | 0 | 27 | 0 | 0 | 45.66 | Pass |
| **BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l** | 25 | 50 | 0 | 27 | 0 | 0 | 5.38 | Pass |

| Parameter | WWDL ELV (Schedule A) | ELV with Condition 2 Interpretation included Note 1 | Interim % reduction from influent concentration | Number of sample results | Number of exceedances | Number of exceedances with Condition 2 Interpretation included | Annual Mean | Overall Compliance (Pass/Fail) |
|---|---|---|---|---|---|---|---|---|
| **Temperature °C** | 0 | 0 | 0 | 13 | 0 | 0 | 8.39 | Pass |

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

Refer to incident section 3.4

Significance of Results:

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 3 exceedances in relation to the Total P parameter and Suspended Solids ELV, 1 of which were above the Condition 2 ELV. The Impact on receiving water is assessed further in Section 2.3.

## 2.3 Ambient monitoring summary

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.

### 2.3.1 Ambient Monitoring Report Summary - MONAGHAN WWTP

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 | Code | Bathing Water | Drinking Water | FWPM | Shellfish | WFD Status |
|---|---|---|---|---|---|---|---|
| **Upstream** | 267812, 333762 | TPEFF2400D0061SW001 | No | No | No | No | Poor |
| **Downstream** | 267939, 334666 | TPEFF2400D0061SW001 | No | No | No | No | Poor |

### 2.3.2 Ambient Monitoring Parameter Summary - MONAGHAN WWTP

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** | RS03S010250 | 2.58 | RS03S010400 | 7.08 | 2.6 | 172.8 |
| **Dissolved Oxygen mg/l** | RS03S010250 | 10.6 | RS03S010400 | 10.8 | | |
| **Ammonia-Total (as N) mg/l** | RS03S010250 | 0.28 | RS03S010400 | 2.87 | 0.14 | 1845.8 |
| **ortho-Phosphate (as P) - unspecified mg/l** | RS03S010250 | 0.08 | RS03S010400 | 0.09 | 0.075 | 12.4 |
| **Temperature °C** | RS03S010250 | 8.2 | RS03S010400 | 9.15 | | |
| **Total Phosphorus (as P) mg/l** | RS03S010250 | 0.16 | RS03S010400 | 0.23 | | |
| **Total Nitrogen mg/l** | RS03S010250 | 3.17 | RS03S010400 | 23.83 | | |
| **pH pH units** | RS03S010250 | 7.95 | RS03S010400 | 7.7 | | |

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The discharge from the works maybe giving rise to a breach of EQS in the receiving water regardless of status.

The parameters which exceeded the EQS and may be causing an impact are: Ammonia, BOD.

# 3 OPERATIONAL REPORTS SUMMARY

## 3.1 Treatment Efficiency Report

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:

### 3.1.1 Treatment Efficiency Report Summary - MONAGHAN WWTP

| Parameter | Influent mass loading (kg/year) | Effluent mass emission (kg/year) | Efficiency (% reduction of influent load) | Comment |
|---|---|---|---|---|
| **cBOD** | 260799.32 | 6708.69 | 97.43 | |
| **SS** | 275767.1 | 8038.96 | 97.08 | |
| **COD** | 794133.48 | 56976.71 | 92.83 | |
| **TP** | 5779.81 | 651.18 | 88.73 | |
| **TN** | 67289.85 | 40300.19 | 40.11 | |

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

## 3.2 Treatment Capacity Report Summary

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.

| MONAGHAN WWTP | |
|---|---|
| **Peak Hydraulic Capacity (m3/day) - As Constructed** | 37008 |

| MONAGHAN WWTP | |
|---|---|
| **DWF to the Treatment Plant (m3/day)** | 7944 |
| **Current Hydraulic Loading - annual max (m3/day)** | 14054 |
| **Average Hydraulic loading to the Treatment Plant (m3/day)** | 3862 |
| **Organic Capacity (PE) - As Constructed** | 37400 |
| **Organic Capacity (PE) - Collected Load (peak week)** | 10987 |
| **Organic Capacity (PE) - Remaining** | 26413 |
| **Will the capacity be exceeded in the next three years? (Yes/No)** | No |

## 3.3 Complaints Summary

A summary of complaints of an environmental nature is included below.

| Number of Complaints | Nature of Complaint | Number Open Complaints | Number Closed Complaints |
|---|---|---|---|
| **5** | Blocked Sewer | 0 | 5 |

## 3.4 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.

### 3.4.1 Summary of Incidents

| Incident Type | Cause | No. of incident occurrences | Recurring (Y/N) | Closed (Y/N) |
|---|---|---|---|---|
| **Other** | Shock load to WWTP | 1 | No | Yes |
| **Non-compliance** | Inadequate Operational Procedures | 1 | No | Yes |

### 3.4.2 Summary of Overall Incidents

| Question | Answer |
|---|---|
| **Number of Incidents in 2018** | 2 |
| **Number of Incidents reported to the EPA via EDEN in 2018** | 2 |
| **Explanation of any discrepancies between the two numbers above** | |

## 3.5 Sludge / Other inputs to the 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)?[3] | Is there a leachate/sludge acceptance procedure for the WWTP? | Is there a dedicated leachate/sludge acceptance facility for the WWTP?[2](Y/N) |
|---|---|---|---|---|---|---|---|
| **Landfill Leachate (delivered by tanker)** | 26500.4 | Volume (m3) | 323 | 3 | No | Yes | Yes |
| **Domestic /Septic Tank Sludge** | 650 | Volume (m3) | 8 | 0.1 | No | Yes | Yes |

| Input type | Quantity | Unit | P.E. | % of load to WWTP | Included in Influent Monitoring (Y/N)?[3] | Is there a leachate/sludge acceptance procedure for the WWTP? | Is there a dedicated leachate/sludge acceptance facility for the WWTP?[2](Y/N) |
|---|---|---|---|---|---|---|---|
| **Waterworks Sludge** | 9556 | Volume (m3) | 116 | 1.1 | No | Yes | Yes |
| **Other** | 18304 | Volume (m3) | 223 | 2 | No | Yes | Yes |

# 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:

**No Appendix Included**

### 4.1.1 SWO Identification

| WWDL Name / Code for Storm Water Overflow | Irish Grid Ref. | Included in Schedule A4 of the WWDL | Significance of the overflow(High / Medium / Low) | Assessed against DoEHLG Criteria | No. of times activated in 2018 (No. of events) | Total volume discharged in 2018 (m3) | Monitoring Status |
|---|---|---|---|---|---|---|---|
| **SW002** | 267845, 333776 | Yes | High | Meeting | 38 | 7775 | Monitored |
| **SW003** | 267405, 333531 | Yes | High | Not Meeting | | | Not Monitored |
| **SW005** | 267123, 333596 | Yes | Medium | Not Meeting | | | Not Monitored |
| **SW006** | 266996, 333605 | Yes | Medium | Not Meeting | | | Not Monitored |
| **SW007** | 267045, 333500 | Yes | Medium | Not Meeting | | | Not Monitored |
| **SW008** | 267324, 333645 | Yes | Medium | Not Meeting | | | Not Monitored |

| WWDL Name / Code for Storm Water Overflow | Irish Grid Ref. | Included in Schedule A4 of the WWDL | Significance of the overflow(High / Medium / Low) | Assessed against DoEHLG Criteria | No. of times activated in 2018 (No. of events) | Total volume discharged in 2018 (m3) | Monitoring Status |
|---|---|---|---|---|---|---|---|
| **SW009** | 267123, 333500 | Yes | Medium | Not Meeting | | | Not Monitored |

### 4.1.2 Inspection Summary Report

| SWO Summary | |
|---|---|
| **How much sewage was discharged via SWOs in the agglomeration in the year (m3)?** | 7775 |
| **Is each SWO identified as non meeting DoEHLG Guidance included in the Programme of Improvements?** | Yes |
| **The SWO Assessment included the requirements of relevant of WWDL schedules?** | Yes |
| **Have the EPA been advised of any additional SWOs / charges to Schedule C3 and A4 under Condition 1.7?** | Yes |

## 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 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) | Licence Schedule | Licence Completion Date | Date Expired? (N/NA/Y) | Status of Works | Timeframe for Completing the Work | Comments |
|---|---|---|---|---|---|---|
| **There are no Specified Improvement Programmes for this Agglomeration.** | | | | | | |

A summary of the status of any improvements identified by under Condition 5.2 is included below.

### 4.2.2 Improvement Programme Summary

| Improvement Identifier | Improvement Description | Improvement Source | Expected Completion Date | Comments |
|---|---|---|---|---|
| **There are no Improvements Programme for this Agglomeration.** | | | | |

### 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 Table".

# 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 list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

| Licence Specific Report | Required by licence | Year included in AER | Included in this AER | Reference to relevant section of AER (e.g. Appendix X). |
|---|---|---|---|---|
| **There is no Licence Specific Report Required in this AER Annual Review.** | | | | |

# 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** | |
| **Is there a need to request/advise the EPA of any modifications to the existing WWDL?** | No |
| **List reason e.g. changes to monitoring requirements** | |
| **Have these processes commenced?** | |
| **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: 13/03/2019

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 ,

Eleanor Roche

Acting Head of Environmental Regulation.

# 7 APPENDIX

There are no Appendices included