

# Annual Environmental Report

2018



Ballygar

D0371-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0371-01, Ballygar, in Galway 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 BALLYGAR WWTP with a Plant Capacity PE of 360. The treatment process includes the following:

### 1.2.1 BALLYGAR WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Manual raked screen
Primary Treatment	Yes	Imhoff tank
Secondary Treatment	Yes	2 No. trickling filters
Nutrient Removal	No	
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 BALLYGAR WWTP

Compliance Status	
Were all parameters compliant for BALLYGAR 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
BALLYGAR WWTP	Liquid Sludge	290	Weight (Tonnes)	5	Tuam WWTP

#### Annual Statement of Measures

It is proposed to upgrade the existing WwTP to provide for a design loading of 1,100 PE. The Planning Authority has recently granted planning permission for Phase 1 of the proposed development. Lands will be required for the proposed expansion of the WwTP. As part of the upgrade WwTP works it is expected a new inlet works, primary settlement tank, biological filter, final settlement tank and sludge drying beds will be installed. The project is currently at detailed design phase. It is expected that Phase 1 of the project will go to tender in Q2 2019 and that construction could commence in Q1/Q2 2020 (current programme is subject to change).

## 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 - BALLYGAR WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Suspended Solids mg/l	6	551	257.34
COD-Cr mg/l	6	1282	804.99
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	454	252.51
Hydraulic Capacity	0	209	208.98

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. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

## 2.2 Discharges from the agglomeration

### 2.2.1 Effluent Monitoring Summary - BALLYGAR 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 exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
pH pH units	0	0	0	6	0	0	7.97	Pass
Ammonia-Total (as N) mg/l	0	0	0	6	0	0	28.58	Pass
COD-Cr mg/l	125	250	0	6	2	1	176.65	Fail
ortho-Phosphate (as P) - unspecified mg/l	0	0	0	6	0	0	2.65	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	6	5	2	47.26	Fail
Suspended Solids mg/l	35	87.5	0	6	5	1	54.33	Fail

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):

Inadequate infrastructure and the WWTP require upgrades to meet ELVs.

### Significance of Results:

The WWTP is non-compliant with the ELV's set in the Wastewater Discharge Licence:

- There were two exceedances in relation to COD, one of which was above Condition 2 ELV.
- There were five exceedances in relation to cBOD, two of which were above Condition 2 ELV.
- There were five exceedances in relation to SS, one of which was above Condition 2 ELV.

Impact on the 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 - BALLYGAR 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
<b>Upstream</b>	178839, 252662	TPEFF1200D0371SW001	No	No	No	No	Moderate
<b>Downstream</b>	178886, 252250	TPEFF1200D0371SW001	No	No	No	No	Moderate

### 2.3.2 Ambient Monitoring Parameter Summary - BALLYGAR 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
<b>Suspended Solids mg/l</b>	RS26B230100	11.88	RS26B230120	9.13		
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	RS26B230100	0.03	RS26B230120	0.3	0.075	353.3
<b>Ammonia-Total (as N) mg/l</b>	RS26B230100	0.05	RS26B230120	1.57	0.14	1082.1
<b>Temperature °C</b>	RS26B230100	12.5	RS26B230120	13		
<b>pH pH units</b>	RS26B230100	7.73	RS26B230120	7.73		
<b>BOD - 5 days (Total) mg/l</b>	RS26B230100	2.8	RS26B230120	5.88	2.6	118.3

#### Significance of Results:

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

The discharge from the works may give 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: ortho-Phosphate, Ammonia and cBOD.

Any other know impacts: N/A

### 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 - BALLYGAR WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
<b>COD</b>	61398.69	13473.51	78.06	
<b>TN</b>				
<b>cBOD</b>	19259.46	3604.83	81.28	
<b>TP</b>				
<b>SS</b>	19627.81	4143.83	78.89	

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.

BALLYGAR WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	300
DWF to the Treatment Plant (m3/day)	100
Current Hydraulic Loading - annual max (m3/day)	209
Average Hydraulic loading to the Treatment Plant (m3/day)	208.98
Organic Capacity (PE) - As Constructed	360
Organic Capacity (PE) - Collected Load (peak week)	668
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

### 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
There is no Complaint data included in the AER.			

### 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)
Non-compliance	WWTP upgrade required to meet ELV	1	Yes	No
Other	Shock load to WWTP	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)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
<b>There is no Sludge and Other Input data for the Treatment Plant included in the AER.</b>							

## 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	178872, 252358	Yes	Unknown	Not yet Assessed			Not Monitored
SW003	178860, 252570	Yes	Unknown	Not yet Assessed			Not Monitored

#### 4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	
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?	No
Have the EPA been advised of any additional SWOs / charges 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 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
<b>D0371-SIP:01</b>	C	31/12/2019	No	Not Started		The Condition 5 Assessment will be completed by Q4 2018
<b>D0371-SIP:02</b>	C	31/12/2019	No	Not Started		

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
<b>There are no Improvement Programmes for this Agglomeration.</b>				

### 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.

### 5.1.1 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).
<b>Priority Substances Assessment</b>	Yes	2016	No	

## 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?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	NA

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

Signed:

Date: 01/03/2019

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