

# Annual Environmental Report 2016

<b>Agglomeration Name:</b>	<b>Ballivor</b>
<b>Licence Register No.</b>	<b>D0254-01</b>



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## Section 1. Executive Summary and Introduction to the 2016 AER

### 1.1 Summary Report on 2016

This Annual Environmental Report has been prepared for **D0254-01, Ballivor**, in County **Meath**, in accordance with the requirements of the wastewater discharge licence for the agglomeration.

There are no specified assessments included as an appendix to this 2016 AER.

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 2,000.

The treatment process includes the following:-

- Preliminary Treatment (screening/grit removal)
- Primary Treatment
- Secondary Treatment (conventional activated sludge/SBR/RBC)
- Nutrient Removal (Conventional activated sludge/SBR/RBC)
- Tertiary Treatment (Sand Filter)

The final effluent from the Primary Discharge Point was compliant with the Emission Limit Values in 2016.

29,000kgs total weight sludge was removed from the wastewater treatment plant in 2016 as liquid sludge. Liquid Sludge is transferred to Farganstown Navan WWTP. 166,000kgs of dewatered Sludge cake was removed from the wastewater treatment plant. Sludge cake is transferred to P Brady Agri, Rosmeen, Kells Co. Meath.

There was no major capital or operational changes undertaken in 2016.

An Annual Statement of Measures is included in **Appendix 7.1**

## Section 2. Monitoring Reports Summary

### 2.1 Summary report on monthly influent monitoring

**Table 2.1 Influent Monitoring Summary**

Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m <sup>3</sup> /d)	Organic Loading (PE/Day)
Number of Samples	12	12	12	12	12		
Annual Max.	410	1104	570	12.5	74.3	1,366	4,606
Annual Mean	171.51	394.53	189.95	4.82	41.55	524.78	1,653.87

#### 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 greater than the peak Treatment Plant Capacity as detailed further in Section 3.2.

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

The annual maximum organic loading is greater than the 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 compliant with Emission Limit Values

## 2.2 Discharges from the agglomeration

**Table 2.2 - Effluent Monitoring**

<b>Effluent Monitoring Summary</b>	<b>BOD (mg/l)</b>	<b>COD (mg/l)</b>	<b>TSS (mg/l)</b>	<b>Ortho P (mg/l)</b>	<b>Ammonia NH<sub>3</sub> (mg/l)</b>
<b>WWDL ELV (Schedule A) where applicable</b>	5.00	125.00	35.00	0.50	1.00
<b>ELV with Condition 2 Interpretation included</b>	10.00	250.00	87.50	0.60	2.00
<b>Interim % Reduction (Schedule A)</b>					
<b>Number of sample results</b>	6	6	6	6	6
<b>Number of sample results above WWDL ELV</b>	0	0	0	0	0
<b>Number of sample results above ELV with Condition 2 Interpretation</b>	1	0	0	0	1
<b>Annual Mean (for parameters where a mean ELV applies)</b>					
<b>Overall Compliance (Pass/Fail)</b>	Pass	Pass	Pass	Pass	Pass

### Significance of results

The WWTP was compliant with the ELV's set in the wastewater discharge licence.  
The impact on receiving waters is assessed further in Section 2.3.

### 2.3.1. Ambient Monitoring Summary

**Table 2.3. Ambient Monitoring Report Summary Table**

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status
Upstream monitoring point	289384E 262591N	RS07B041600	n/a	n/a	n/a	n/a	Moderate
Downstream monitoring point	289791E 263467N	RS07B041650	N	N	N	N	Moderate

IW upstream and downstream monitoring results are included as in Appendix 7.2.

#### Significance of results

- The WWTP was compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- Based on the 2016 ambient monitoring a deterioration in water quality has been identified downstream in terms of BOD, however it is not known if it is or is not caused by the WWTP.
- The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.
- Other potential causes of deterioration in water quality relevant to this area unknown.

### 2.4 Data collection and reporting requirements under the UWWTD

The electronic submission of data was completed on 15/02/2017.

### 2.5 Pollutant Release and Transfer Register (PRTR) - report for previous year

A PRTR is not required as the PE is <100,000.

## Section 3. Operational Reports Summary

### 3.1 Treatment Efficiency Report

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)
Influent mass loading (kg/year)	36,220	83,317	40,115	1,019	8,775
Effluent mass emission (kg/year)	659	4,636	1,973	56	4,738
% Efficiency (% reduction of influent load)	98%	94%	95%	95%	46%

### 3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m <sup>3</sup> /day)	450
Hydraulic Capacity – Design / As Constructed (peak flow) (m <sup>3</sup> /day)	1,350
Hydraulic Capacity – Current loading (m <sup>3</sup> /day)	525
Hydraulic Capacity – Remaining (m <sup>3</sup> /day)	825
Organic Capacity - Design / As Constructed (PE)	2,000
Organic Capacity - Current loading (PE)	1,654
Organic Capacity – Remaining (PE)	346
Will the capacity be exceeded in the next three years? (Yes / No)	No
Is an upgrade or expansion of the WWTP proposed? (i.e. if on Minor Programme or CIP) (Yes/No)	No

### 3.3 Extent of Agglomeration Summary Report

In this section Irish Water is required to report on the amount of urban waste water generated within the agglomeration. It does not include any waste water collected and created in a private system and discharged to water under a Section 4 Licence issued under the Water Pollution Acts 1977 (as amended).

**Table 3.3 - Extent of Agglomeration Summary Report**

	% of P.E. load generated in the agglomeration	Estimated / Measured
Load generated in the agglomeration that is collected in the sewer network	100	
Load collected in the agglomerations that enters treatment plant	Unknown	
Load collected in the sewer network but discharges without treatment (includes SWO, EO, and any discharges that are not treated)	Unknown	Estimated

**Load generated in the agglomeration that is collected in the sewer network** is the total load generated and collected in the municipal network within the boundary of the agglomeration.

**Load collected in the agglomerations that enters treatment plant** is that portion of the previous figure which enters the waste water treatment plant.

**Load collected but discharged without treatment** is that portion of the first figure which is discharged without treatment.

### 3.4 Complaints Summary

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

**Table 3.4 - Complaints Summary Table**

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
2	Sewage Flooding	0	2



### 3.5 Reported Incidents Summary

A summary of reported incidents is included below.

**Table 3.5.1 - Summary of Incidents**

Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted. Note <sup>1</sup>	Reported to EPA (Yes/No)	Closed (Yes/No)
None								

Note 1: For shellfish waters notify the Marine Institute (MI) Sea Fisheries Protection Authority (SFPA) Food Safety Authority (FSAI) and An Bord Iascaigh Mhara (BIM). This should also include any other authorities that should be contacted arising from the findings of any Licence Specific Reports also e.g. Drinking Water Abstraction Impact Risk Assessment, Fresh Water Pearl Mussel Impact Assessments etc.

**Table 3.5.2 - Summary of Overall Incidents**

Number of Incidents in 2016	0
Number of Incidents reported to the EPA via EDEN in 2016	0
Explanation of any discrepancies between the two numbers above	N/A

### 3.6 Sludge / Other inputs to the WWTP

Other inputs to the waste water treatment plant are summarised in Table 3.6 below.

**Table 3.6 - Other Inputs**

Input Type	m <sup>3</sup> /year	P.E.	% of load to WWTP	Included in Influent Monitoring? (Y/N)	Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Domestic /Septic Tank Sludge	0	0	0	0	0	0
Industrial / Commercial Sludge	0	0	0	0	0	0
Landfill Leachate (delivered by tanker)	0	0	0	0	0	0
Landfill Leachate (delivered by sewer network)	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0

## Section 4. Infrastructure Assessments and Programme of Improvements

### 4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report was submitted in the 2014 AER. A summary of the significance and operation is included below.

**Table 4.1.1 - SWO Identification and Inspection Summary Report**

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High/Med/Low)	Compliance with DoEHLG criteria	No. of times activated in 2016 (No. of events)	Total volume discharged in 2016 (m <sup>3</sup> )	Total volume discharged in 2016 (P.E.)	Estimated / Measured data
SW002	269071E 253830N	Yes	Low	Compliant	51	Unknown	Unknown	Measured

**Table 4.1.2 - SWO Identification and Inspection Summary Report**

How much sewage was discharged via SWOs in the agglomeration in the year (m <sup>3</sup> /yr)?	Unknown
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2016?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	N/A
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	Yes
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1?	N/A

## 4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.

In 2017, the existing hydraulic constraints will be remedied by replacing pipe work between the aeration tanks and clarifiers and raising the outlet weirs in the clarifiers which will increase capacity of wastewater treatment works. This was not completed in 2016.

There are no specified improvements works in the licence. See Appendix 7.1 for Statement of Measures.

**Table 4.2.1 - Specified Improvement Programme Summary**

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Construction Work Completed	Licensee Timeframe for Completing the Work	Comments
None							

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

**Table 4.2.2 - Improvement Programme Summary**

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comments
None					

**Table 4.2.3 - Sewer Integrity Risk Assessment Tool Summary**

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Reference to relevant section of AER (e.g. Appendix 2 Section 4).	Specified improvements	Comment
Hydraulic Risk Assessment Score	High	140	2014 AER Appendix 7.5		
Environmental Risk Assessment Score	Low	110			
Structural Risk Assessment Score	High	150			
Operation & Maintenance Risk Assessment Score	Low	20			
Overall Risk Score for the agglomeration	High	420			High score is not considered to be accurate due to lack of proper information.

## Section 5. Licence Specific Reports

**Licence Specific Reports Summary Table**

Licence Specific Report	Never required by condition 5 in Licence	Required in this AER or outstanding from previous AER	Included in this AER / Remains outstanding	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Required	No	N/A	2014 AER
Drinking Water Abstraction Point Risk Assessment	Not Required			
Shellfish Impact Assessment	Not Required			
Pearl Mussel Report	Not Required			
Toxicity/Leachate Management	Not Required			
Toxicity of Final Effluent Report	Not Required			
Small Stream Risk Score Assessment	Not Required			
Habitats Impact Assessment	Not Required			

**Licence Specific Reports Summary of Findings**

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	No	N/A
Drinking Water Abstraction Point Risk Assessment	N/A	
Shellfish Impact Assessment	N/A	
Pearl Mussel Report	N/A	
Toxicity/Leachate Management	N/A	
Toxicity of Final Effluent Report	N/A	
Small Stream Risk Score Assessment	N/A	
Habitats Impact Assessment	N/A	

## 5.1 Priority Substances Assessment

The Priority Substances Assessment report was submitted in the 2014 AER. A summary of the findings of this report is included below.

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
<b>Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance</b>	Desk Top Study
<b>Does the assessment include a review of Trade inputs to the works?</b>	Yes
<b>Does the assessment include a review of other inputs to the works?</b>	Yes
<b>Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)</b>	Yes
<b>Does the assessment identify that priority substances may be impacting the receiving water?</b>	No
<b>Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?</b>	No
<b>Recommendations</b>	Yes
<b>Status of any improvement measures required</b>	N/A

## Section 6. Certification and Sign Off

**Table 6.1 - Summary of AER Contents**

<b>Does the AER include an executive summary?</b>	Yes
<b>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)?</b>	Yes
<b>Is there a need to advise the EPA for consideration of a technical amendment / review of the licence?</b>	No
<b>List reason e.g. additional SWO identified</b>	N/A
<b>Is there a need to request/advise the EPA of any modifications to the existing WWDL? Refer to Condition 1.7 (changes to works/discharges) &amp; Condition 4 (changes to monitoring location, frequency etc.)</b>	No
<b>List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements</b>	N/A
<b>Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)</b>	N/A
<b>Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?</b>	N/A

### Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2016 AER.
- Monitoring Reports Summary.
- Operational Reports Summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports
- Certification and Sign Off
- Appendices

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

Signed:  Date: 01/02/2017 .....

**Elizabeth Arnett**  
**Head of Corporate Affairs and Environmental Regulation**



## **Section 7. Appendices**

Appendix 7.1 - Annual Statement of Measures

Appendix 7.2 - Ambient Monitoring Summary

## Appendix 7.1 Statement of Measures

No additional measures have been taken in 2016 in relation to the prevention of environmental damage. The need for measures to prevent environmental damage is reviewed on an annual basis.

Following an IW inspection, the following proposed works are scheduled to be carried out at the Ballivor WWTP in 2017:

1. Power wash aeration and clarifier tanks and dispose of any sludge or debris.
2. Repair of any damaged sections of air supply pipework, replacement of all existing diffusers and validate the integrity of the system by pattern testing of the network.
3. Increasing the capacity of the existing clarifiers by removing the hydraulic constraint between the aeration tanks and the clarifiers.
4. Extend the depth of existing clarifier scum plate by approximately 300mm and raise existing clarifier scum / weir plate unit and their associated outlet pipework to match revised effluent level in clarifier arising from removal of the hydraulic constraint between the aeration and clarifier tanks (i.e. the replacement of the 100mm dia. interconnected pipework with 200mm dia. connection).
5. Influent Directional Bend: Design, supply and install a 90-degree bend to end of existing influent channel to direct liquors down to the middle and bottom of the anoxic tank
6. Resolve existing plant safety issues.
7. As Constructed drawings: Update existing digital drawings for the plant to include all items installed at the plant under these works.

## Appendix 7.2

### Ambient Monitoring

							Dissolve	Dissolve	pH	BOD	Ammonium	Ortho- P	Total N
	Station Reference	Station Eas	Station Nor	Sample Template	Sample Date	Sample	mg/l	% Sat.	pH units	mg/l	mg/l	mg/l	mg/l
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	3-Mar-2016	Grab	10.2	84	7.6	2.18	0.09	0.04	1.96
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	14-Apr-2016	Grab	9.9	86	7.78	2.56	0.09549	0.04091	2.51
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	30-May-2016	Grab	7.7	72	7.86	0.904	0.06	0.045	2.71
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	27-July-2016	Grab	5.4	50	8	1.69	0.138	0.077	1.58
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	18-Aug-2016	Grab	5	48	7.69	1.4	0.093	0.077	1.67
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	24-Aug-2016	Grab	6.8	64	7.67	0.27	0.149	0.078	2.33
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	20-Sep-2016	Grab	7.8	76	7.924	0.86	0.034	0.052	1.52
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	4-Oct-2016	Grab	7.3	69	7.8	1.1	0.03	0.041	1.6
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	16-Nov-2016	Grab	7.3	67	7.91	< 1	0.036	0.036	1.63
u/s Ballivor	RS07B520620	268768	253910	WWDL_Upstream	1-Dec-2016	Grab	10.3	76	7.78	1.1	0.071	0.037	1.76
					MEAN		7.77	69.20	7.80	1.34	0.08	0.05	1.93
					95%		10.26	85.10	7.97	2.41	0.14	0.08	2.62
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	3-Mar-2016	Grab	10.1	84	7.57	3.27	0.194	0.06	2.43
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	14-Apr-2016	Grab	9.9	87	7.78	3.77	0.24096	0.05702	2.91
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	30-May-2016	Grab	7.8	73	7.89	4.528	0.05	0.079	6.75
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	27-July-2016	Grab	6.4	64	8.09	1.61	0.065	0.097	6.68
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	18-Aug-2016	Grab	6.8	68	7.79	2.04	0.073	0.111	12.4
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	24-Aug-2016	Grab	8	77	7.78	1.52	0.104	0.101	4.04
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	20-Sep-2016	Grab	8.4	81	7.959	1.66	0.045	0.042	4.4
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	4-Oct-2016	Grab	7.6	73	7.9	1.1	0.024	0.062	4.97
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	16-Nov-2016	Grab	7.9	71	7.89	0.3	0.039	0.051	3.94
d/s Ballivor	RS07B520690	269682	253736	WWDL_Downstream	1-Dec-2016	Grab	10.4	77	7.79	1.6	0.065	0.058	2.71
					MEAN		8.33	75.50	7.84	2.14	0.09	0.07	5.12
					95%		10.27	85.65	8.03	4.19	0.22	0.11	9.86