Annual Environmental Report 2017

Agglomeration Name:	**Ballybay**
Licence Register No.	**D0207-01**

Contents

Section 1. Executive Summary and Introduction to the 2017 AER

1.1 Summary Report on 2017

This Annual Environmental Report has been prepared for **D0207-01, Ballybay,** in County **Monaghan**, in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified assessments are included as an appendix to the AER as follows:

- Drinking water risk assessment

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 7823. The treatment process includes the following:-

- Preliminary Treatment (Screening and Grit Removal)
- Secondary Treatment (Aeration)

The final effluent from the Primary Discharge Point was compliant with the Emission Limit Values in 2017.

452,880kgs sludge as dewatered cake was removed from the wastewater treatment plant in 2017.
Sludge was transferred to and Sludge was transferred to the BioCore Sludge Treatment Centre in Ballivor , Co Meath (SSF_COR_MH_13_0001-02).

The following improvement works were undertaken in 2017:-

1. Issue *Travelling scrapers in Clarifier tank No 1 not working*
Measure *Refurbishment of travelling scraper assembly*
Status *100 % complete*

2. Issue *Faulty optical DO sensor system. No control of DO in aeration tank.*
Measure *Replacement DO system required*
Status *0% complete*

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

2.1.1 Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m3/d)
Number of Samples	12	12	12	12	12	
Annual Max.	467	1328	380	11.6	89.8	4944
Annual Mean	279.95	648.42	161.67	7.50	45.17	512.33

Other inputs in the form of sludge/leachate are added to the WWTP after the influent monitoring point and are therefore not represented by influent monitoring. Other inputs, where relevant, are detailed in Section 3.6.

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 compliant with Emission Limit Values

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 less than the Treatment Plant Capacity as detailed further in Section 3.2.

2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring

2.2.1 Effluent Monitoring Summary	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	pH (Range)	Comment
WWDL ELV (Schedule A) where applicable	25.00	125.00	35.00	6 to 9	Note: ELV of 0.2mg/l N will apply from the 31/12/19; ELV of 0.08 mg/l P will apply from the 31/12/19
ELV with Condition 2 Interpretation included	50.00	250.00	87.50	No allowable exceedances	
% Reduction (Schedule A)					
Number of sample results	12	12	12	12	
Number of sample results above WWDL ELV	1	1	1	0	
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	0	
Annual Mean (for parameters where a mean ELV applies)					
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Pass	

Significance of results

The WWTP was compliant with the ELV's set in the wastewater discharge licence.

2.3 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
Upstream Monitoring Point	271593, 320439	IE_NW_36D020300				
Downstream Monitoring Point	271517, 320395	IE_NW_36D020300	No	No	No	No
Downstream Monitoring Point #2						

Table 2.3.2 Ambient Impact Assessment Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD	0-Phosphate (as P)	Ammonia (as N)	Nitrogen		
Upstream Monitoring Point	Poor	1.85	0.064	0.067			
Downstream Monitoring Point	Poor	2.41	0.21	0.086			
Downstream Monitoring Point #2							
Difference between Upstream and Downstream		0.56	0.146	0.019			
Difference between Upstream and Downstream #2							
EQS		2.6	0.075	0.14			
% of Eqs		21.54%	194.67%	13.57%			
% of Eqs #2							

The results for the upstream and downstream monitoring and/or additional monitoring data sets from Irish Water are included in the Appendix.

Significance of results

- The WWTP was compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The discharge from the wastewater treatment plant has an observable negative impact on the water quality.
- A deterioration in water quality has been identified however it is not known if it is or is not caused by the WWTP.
- The discharge from the WWTP has an observable negative impact on the Water Framework Directive status.

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

A PRTR is not required as the PE is < 100000

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)	63,668	147,466	36,767	1,706	10,273
Effluent mass emission (kg/year)	1,798	9,429	2,218	584	5,377
% Efficiency (% reduction of influent load)	97%	94%	94%	66%	48%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	1,653
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	4,960
Hydraulic Capacity – Current loading (m3/day)	512
Hydraulic Capacity – Remaining (m3/day)	4,448
Organic Capacity - Design / As Constructed (PE)	7,823
Organic Capacity - Collected Load (PE)	3,014
Organic Capacity – Remaining (PE)	4,809
Will the capacity be exceeded in the next three years? (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		Estimated
Load collected in the agglomerations that enters treatment plant	Unknown	Estimated
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**
1	Investigation Sewage Flooding - Below Ground Waste Water	0	1

3.5 Reported Incidents Summary

A summary of reported incidents is included below.

Table 3.5.1 - Summary of Incidents

3.5.1 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 1	Reported to EPA (Yes/No)	Closed (Yes/No)
INCI013451 Abatement equipment offline	One aerator failed	Plant or equipment breakdown at WWTP	1	No	Aerator repaired	EPA	Yes	Yes

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 2017	1
Number of Incidents reported to the EPA via EDEN in 2017	1
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

There were no sludge/other inputs to the WWTP in 2017.

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

A summary of the Storm Water Overflow significance and operation is included below. The Stormwater Overflow Assessment was submitted previously in AER 2016.

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 2017 (No. of events)	Total volume discharged in 2017 (m3)	Total volume discharged in 2017 (P.E.)	Estimated / Measured data
SW003	272255E 320504N	Yes	Low	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW004	271947E 320148N	Yes	Low	Compliant	Unknown	Unknown	Unknown	Estimated
SW005	271618E 320369N	Yes	Low	Non-Compliant	44	17105	208	Measured

Table 4.1.2 - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m3/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 2013?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	No
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	No
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.

The Improvement Programme is included in Appendix: 7.1 and addresses the **Specified Improvement Programmes** as detailed in Schedules A3 and C of the WWDL. It should detail other improvements identified through assessments required under the licence.

Table 4.2.1 - Specified Improvement Programme Summary

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Construction Work Completed	Expected Completion Date	Comments
Appropriate works to ensure compliance with the ELV's specified in Schedule A: Discharges and Discharge Monitoring.	C	31/12/2019	No	Not started	0%		
Complete improvements to comply with ELVs specified in Schedule A: Discharges and Discharge Monitoring. Implement, in accordance with Condition 5.6.1, either (a) improvements to the existing	C	31/12/2019	No	Not started	0%		

waste water works to achieve compliance with the emission limit values specified in Schedule A.1: Primary Waste Water discharge & Monitoring of this licence, or (b) an alternative primary discharge point, or (c) connection to another agglomeration.							

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 / Name	Improvement Description	Improvement Source	Progress (% complete)	Expected Completion Date	Comments
1007268	Flow monitoring	Improved operational control	100%		Nivus Unit and Influent sampler installed 2016

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	125	Appendix 7.4 AER 2016		
Environmental Risk Assessment Score	Low	225	Appendix 7.4 AER 2016		
Structural Risk Assessment Score	High	105	Appendix 7.4 AER 2016		
Operation & Maintenance Risk Assessment Score	High	200	Appendix 7.4 AER 2016		
Overall Risk Score for the agglomeration	High	655	Appendix 7.4 AER 2016		

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required by Condition 5 in Licence	Required in this AER or outstanding from previous AER?	Included in this AER?	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Required	Yes	No	AER 2016
Drinking Water Abstraction Point Risk Assessment	Required	Yes	Yes	Appendix: Drinking Water Risk Assessment
Shellfish Impact Assessment	Not Required	No	No	
Pearl Mussel Report	Not Required	No	No	
Toxicity/Leachate Management	Not Required	No	No	
Toxicity of Final Effluent Report	Not Required	No	No	
Small Stream Risk Score Assessment	Not Required	No	No	
Habitats Impact Assessment	Not Required	No	No	

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	Yes	There were no recommendations
Drinking Water Abstraction Point Risk Assessment	Yes	• The recommendations of the 2016 SWO report to reduce risk from non-compliant SWO's should be implemented. • All incidents at the WWTP should be notified to Stranooden GWS (who are responsible for the downstream water abstraction water supply scheme), the EPA and the Inland Fisheries Board. All control measures and necessary works to address the incident should be implemented.

Shellfish Impact Assessment	No	
Pearl Mussel Report	No	
Toxicity/Leachate Management	No	
Toxicity of Final Effluent Report	No	
Habitats Impact Assessment	No	

5.1 Priority Substances Assessment

The Priority Substance Assessment Report was submitted previously in AER 2016. A summary of the significance and operation is included below.

Table 5.1 - Priority Substance Assessment Summary Report

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?	Desktop Study and Screening Analysis
Does the assessment include a review of Trade inputs to the works?	Yes
Does the assessment include a review of other inputs to the works?	Yes
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)	Yes
Does the assessment identify that priority substances may be impacting the receiving water?	No
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	No
Recommendations	There were no recommendations
Status of any improvement measures required	

5.2 Drinking Water Abstraction Point Risk Assessment

The Drinkng Water Risk Assessment is included in the Appendix. A summary of the significance and operation is included below.

Table 5.2 - Drinking Water Abstraction Point Risk Assessment Summary

Is a Drinking Water Abstraction Risk Assessment required in the 2017 AER (or outstanding from a previous AER)?	Yes
Does the Drinking Water Abstraction Risk Assessment identify whether any of the discharges in Schedule A of the licence pose a risk to a drinking water abstraction?	No
Does the assessment identify if any other discharge(s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)?	Yes
What is the overall risk ranking applied by the licensee?	Medium
Does the risk assessment consider the impacts of normal operation?	Yes
Does the risk assessment consider the impacts of abnormal operation (e.g. incidents /overflows)?	Yes
Does the risk assessment include control measures for each risk identified?	Yes
Does the risk assessment consider operational control measures?	Yes
Does the risk assessment include infrastructural control measures?	No
Recommendations	• The recommendations of the 2016 SWO report to reduce risk from non-compliant SWO's should be implemented. • All incidents at the WWTP should be notified to Stranooden GWS (who are responsible for the downstream water abstraction water supply scheme), the EPA and the Inland Fisheries Board. All control measures and necessary works to address the incident should be implemented.

Does the Improvement Programme for the agglomeration include control measures / corrective actions to eliminate / reduce priority substances identified as having an impact on receiving water quality?	No
Status of any improvement measures required.	Not started

A copy of the detailed assessment should be included as an appendix to the AER. Where relevant, findings from this assessment should be considered under the Programme of Improvements required under Condition 5.

Section 6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

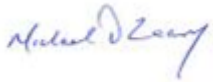
Does the AER include an executive summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration 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 modifications to the existing WWDL? Refer to Condition 1.7 (changes to works/discharges) & Condition 4 (changes to monitoring location, frequency etc.)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	Yes
Ensure the following reports are included	Drinking water risk assessment

Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2017 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: 22/02/2018

Michael O'Leary
Acting Head of Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures / Improvement Programme

1. Issue Travelling scrapers in Clarifier tank No 1 not working
   Measure Refurbishment of travelling scraper assembly
   Status 100 % complete

2. Issue Faulty optical DO sensor system. No control of DO in aeration tank.
   Measure Replacement DO system required
   Status 0% complete

Appendix 7.2 Ambient Monitoring

Upstream

Date	Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	Total N (mg/l)	D.O. (% Sat)	D.O. (mg/l)	pH (mg/l)	Suspended Solids mg/l
10/01/2017	0.06	0.05	1.40			10.48	7.70	5.00
15/02/2017	0.05	0.06	1.40			11.04	7.90	2.50
20/03/2017	0.06	0.06	2.30			10.20	7.70	6.00
18/04/2017	0.03	0.05	1.80			10.84	8.10	2.50
10/05/2017	0.04	0.02	2.40			10.20	7.90	2.50
14/06/2017	0.04	0.09	1.50			8.83	8.00	11.00
20/07/2017	0.08	0.05	1.90			6.61	7.90	5.00
08/08/2017	0.02	0.10	1.90			9.57	7.90	2.50
20/09/2017	0.02	0.07	1.30			9.65	8.00	2.50
09/10/2017	0.04	0.08	1.00			9.85	7.80	2.50
15/11/2017	0.29	0.10	3.50			10.28	7.80	2.50
Mean	0.07	0.06	1.85			9.78	7.88	4.05
95%ile	0.19	0.10	2.95			10.94	8.05	8.50

Downstream

Date	Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	Total N (mg/l)	D.O. (% Sat)	D.O. (mg/l)	pH (mg/l)	Suspended Solids mg/l
10/01/2017	0.06	0.05	3.00			9.97	7.70	16.00
15/02/2017	0.05	0.15	2.40			11.36	7.90	2.50
20/03/2017	0.06	0.06	2.90			10.09	7.60	6.00
18/04/2017	0.05	0.32	1.40			10.50	8.00	2.50
10/05/2017	0.11	1.02	5.30			10.09	7.80	10.00
14/06/2017	0.06	0.12	1.80			8.88	8.00	6.00
20/07/2017	0.14	0.18	2.30			7.72	7.90	11.00
08/08/2017	0.03	0.14	1.80			9.30	7.90	2.50
20/09/2017	0.03	0.10	1.20			9.59	7.90	2.50
09/10/2017	0.03	0.13	1.30			9.50	7.80	2.50
15/11/2017	0.32	0.11	3.20			10.49	7.70	2.50
Mean	0.09	0.22	2.42			9.77	7.84	5.82
95%ile	0.23	0.67	4.25			10.93	8.00	13.50

Appendix 7.3 Drinking water risk assessment

Drinking Water Risk Assessment

Agglomeration Name:	**Ballybay**
Licence Register No.	**D0207-01**

Table of Contents

1 Introduction

This report has been prepared for D0207-01, Ballybay, in County Monaghan in accordance with the requirements of Condition 4.19 of the wastewater discharge licence for the agglomeration. This report assesses the potential impacts on drinking water abstractions.

The risk from the discharges from the agglomeration has been assessed under four separate headings with an overall risk ranking applied in conclusion:

(1) Level of treatment and capacity of WWTP
(2) Discharge compliance and level of dilution
(3) Receiving waters / abstraction water quality
(4) Impact of discharges during normal and abnormal operation

2 Tabular Details of Agglomeration and Drinking Water Abstractions

2.1 Wastewater Treatment Plant Details

The wastewater treatment plant details are summarised in Table 2.1 below.

Table 2.1 – Wastewater Treatment Plant

1	Type of treatment (primary, secondary, tertiary)	Secondary
2	Hydraulic Capacity – Design / As Constructed (dry weather flow) (m^3/day)	1653
3	Hydraulic Capacity – Design / As Constructed (peak flow) (m^3/day)	4960
4	Hydraulic Capacity – Current loading (m^3/day)	513
5	Hydraulic Capacity – Remaining (m3/day)	4446
6	Organic Capacity - Design / As Constructed (PE)	7238
7	Organic Capacity - Current loading (PE)	1824
8	Organic Capacity – Remaining (PE)	5459
9	Will the capacity be exceeded in the next three years? (Yes / No)	No
11	Are ELV's compliant with licence? (Yes / No)	Yes
12	If answer to No. 11 above is **No**, list parameters not in compliance	

2.2 Discharges from the Agglomeration

A list discharges from the agglomeration is summarised in Table 2.2 below.

Table 2.2 – List of Discharges from the Agglomeration

Discharge	Type of Discharge	Receiving Waters	Level of Dilution (DWF vs 95 percentile river flow)	Easting	Northing	Frequency of Discharge (if known)	Compliant Discharge (Yes / No)
Licenced Discharges							
PSW01	Primary	River Dromore (IE-NW-36_30)	Primary effluent daily flow : 0.006m^3 /sec Receiving water 95%ile flow = 0.03m^3/sec.	271553	320412	Continuous	Yes
SW003	Storm Water Overflow	Lough Major	>8:1 Dilutions in receiving water. SWO DWF 0.0016m^3/s	272255	320504	Unknown	Non compliant _ unknown location
SW004	Storm Water Overflow	Dromore River IE_MW_36D020300	>8:1 Dilutions in receiving water. SWO DWF = 0.005m^3 / sec 95%ile flow = 0.116m^3/s	271947	320148	Unknown	Compliant
SW005	Storm Water Overflow	Dromore River System IE_MW_36D020300*	>8:1 Dilutions in receiving water SWO DWF 0.016m^3/s 95%ile flow = 0.031m^3/s	271618	320369	Storm Events 613.9m^3 from October to December 2016	Non-Compliant

* This is stated as Lough Major in the discharge licence, however it has been identified that the Dromore River System is the correct discharge location

Table 2.3 – List of Downstream Drinking Water Abstractions

Abstraction Code	Agglomeration Served	Abstraction Volume (m^3/day)	Distance Downstream (m)	Type of Treatment	Easting	Northing
Scheme Code 2400PRI2021	Ballybay and Environs 2986	1835 (volume produced/ day 2015)	3.5km approx	Coagulation, Rapid Gravity Filtration, pH Correction, Disinfection.	271531	320407

3 Risk Assessment

3.1 Level of Treatment and Capacity of WWTP

Ballybay agglomeration is served by a wastewater treatment plant with a plant capacity PE of 7,238 and a current loading of 1,824 (2016 AER). The treatment plant includes the following:

- Preliminary Treatment (Screening and Grit Removal)
- Secondary Treatment (Extended Aeration Activated Sludge Process)
- Chemical Dosing for Phosphorous Removal

The primary discharge point (PSW01) discharges to the river Dromore. There are three storm water overflows on the sewer network, two of which discharge to the Dromore river and the third to Lough Major.

As the treatment plant provides secondary treatment and the plant is operating within capacity the risk is estimated to be **low**.

3.2 Discharge Compliance and Level of Dilution

The primary discharge was compliant with the Emission Limit Values in 2016.

There are 3 known SWO's within the agglomeration. 2 No. SWO's are non-complaint with criteria for storm water overflows, as set out in the DoEHLG Procedures and Criteria in relation to Storm Water Overflows 1995. The significance of these SWO's have been classified as "*low*" as outlined in the Storm Water Overflow report submitted as part of the 2016 AER .

Therefore the risk level is estimated to be **medium**.

3.3 Receiving waters / Abstracted Water Quality

Treated effluent from Ballybay wastewater treatment plant is discharged to the Dromore River, waterbody IE_NW_36D020600 Dromore_040. The WFD status 2010-2015 of this water body is poor. Ambient monitoring downstream of the wastewater treatment plant shows an increase in orthophosphate levels . The water quality upstream or downstream of Ballybay WWTP does not meet the required EQS for good status waters. Other potential causes of deterioration in water quality relevant to this area are unknown. The Wastewater Discharge Authorisation (WWDA) for Ballybay contains more stringent ELV's for cBOD, as well as new ELVs for Ammonia and Orthophosphate which are due to commence on the 31/12/19. The final effluent from the primary discharge point was compliant with the existing emission limit values in 2015, 2016 and 2017.

White Lough, the water supply source for the Stranooden private group water supply scheme is located approximately 3.5km downstream of the discharge from Ballybay WWTP. White Lough IE_NW_36_647 for has been assigned "poor status" by WFD for 2010-2015. It is

likely that Ballybay WWTP is not the sole cause of this status and other potential causes of deterioration in water quality relevant to this area are unknown.

Therefore the risk is estimated to be **low**.

3.4 Impact of Discharges During Normal and Abnormal Operations

During normal operation the risk from the WWTP is low. Ballybay is a Secondary treatment facility and the plant is operating within capacity. There were no breaches of existing ELV's during 2016.

During abnormal operations, given that 2 No SWO's are non-compliant the risk to the downstream water body is **moderate**.

The treatment plant for the Stranooden GWS consists of the following: Coagulation, Rapid Gravity Filtration, pH Correction, Disinfection.

4 Overall Risk and Recommendations

The findings concerning the potential impact of the Ballybay WwTP on the Stranooden Group Water Scheme drinking water abstraction are as follows:

- The WwTP currently provides secondary treatment and is operating within capacity.
- There were no exceedances of ELV's in 2016.
- The plant discharges to the Dromore River and from here flows to White Lough which is located approximately 3.5km downstream of the plant. The abstraction point for the Stranooden Group Water Scheme is from White Lough. The status of the Dromore river is classed as moderate. White Lough has been assigned a poor status.
- Two storm water overflows on the network have been identified as non-compliant.

Considering the assessment criteria above the overall risk is estimated to be **medium**.

Recommendations for the minimisation of risks:

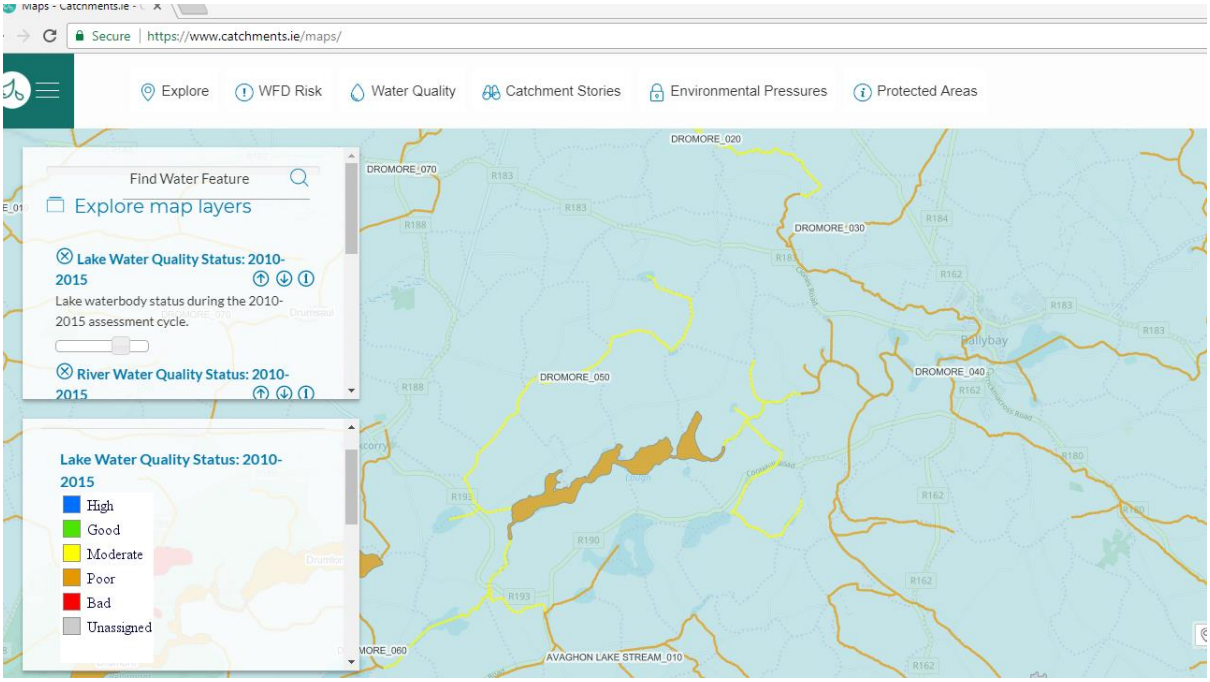
- A new ELV for orthophosphate is due to commence on the 31/12/19. Phosphorus removal will be required to meet this new ELV and this should further reduce the phosphorus load to downstream waterbodies during normal operations.
- The recommendations of the 2016 SWO report to reduce risk from non-compliant SWO's should be implemented.
- All incidents at the WWTP should be notified to Stranooden GWS (who are responsible for the downstream water abstraction water supply scheme), the EPA and the Inland Fisheries Board. All control measures and necessary works to address the incident should be implemented.

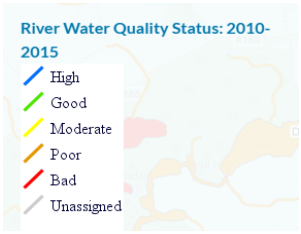
Drinking Water Abstraction Point Risk Assessment Summary

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
Is a Drinking Water Abstraction Risk Assessment required in the 2017 AER (or outstanding from a previous AER)	Outstanding from 2016
Does the Drinking Water Abstraction Risk Assessment identify whether any of the discharges in Schedule A of the licence pose a risk to a drinking water abstraction	No
Does the assessment identify if any other discharge(s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)	Yes
What is the overall risk ranking applied by the licensee	M
Does the risk assessment consider the impacts of normal operation	Yes
Does the risk assessment consider the impacts of abnormal operation (e.g. incidents /overflows)	Yes
Does the risk assessment include control measures for each risk identified	Yes
Does the risk assessment consider operational control measures e.g? waste water incident notification to drinking water abstraction operator	Yes
Does the risk assessment include infrastructural control measures	No
Does the Improvement Programme for the agglomeration include control measures / corrective actions to eliminate / reduce priority substances identified as having an impact on receiving water quality?	Priority substances screening carried out in 2016, no further screening required

Appendix 1 –

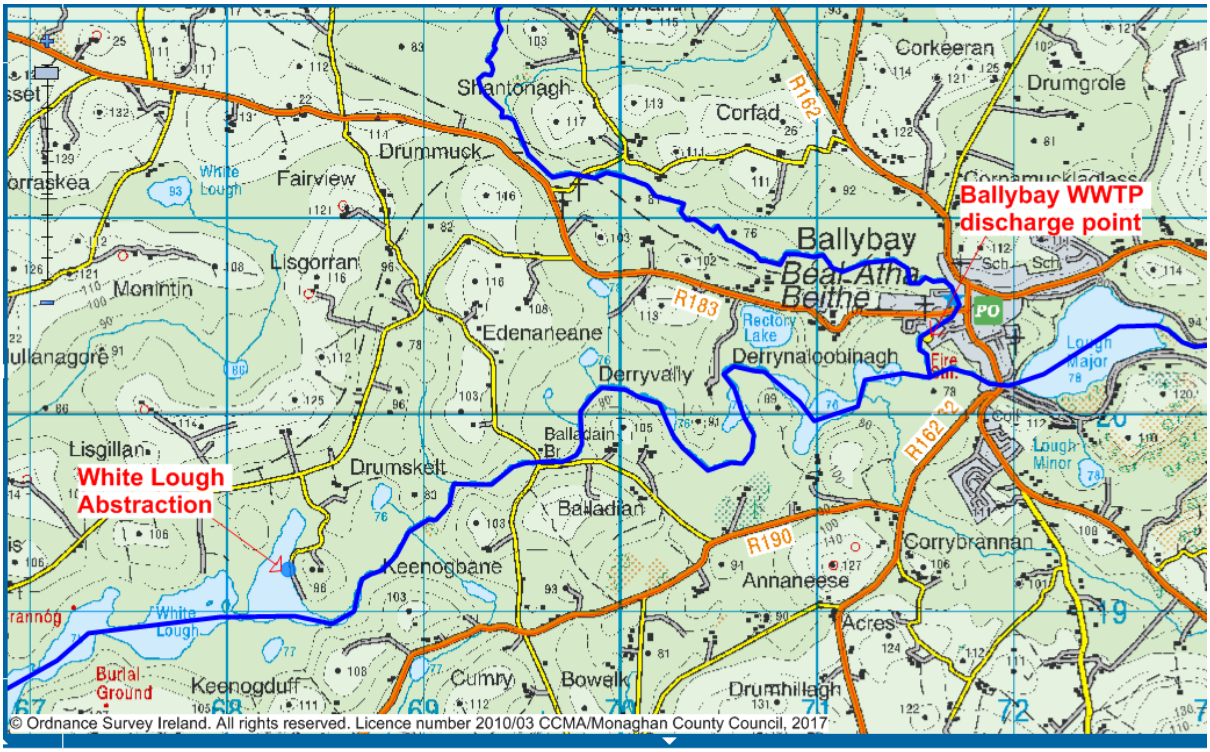
Map 1:





Source of Map 1: https://www.catchments.ie/maps/

Map2:



Map 2:

Figure 1: Locations of SWO's in Ballybay