

# Annual Environmental Report 2016

<b>Agglomeration Name:</b>	<b>Ballybay</b>
<b>Licence Register No.</b>	<b>D0207-01</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 **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:

- Sewer Integrity Risk Assessment 2016 in Appendix 7.3
- Storm water overflow assessment 2016 in Appendix 7.4
- Priority substances assessment 2016 in Appendix 7.5

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 2016.

528,820kgs total weight sludge was removed from the wastewater treatment plant in 2016 as dried cake sludge. Sludge was transferred to the BioCore Sludge Treatment Centre in County Meath (SSF\_COR\_MH\_13\_0001-02) where it was lime stabilised prior to landspreading.

There were 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

<b>2.1.1 Monthly Influent Monitoring</b>	<b>BOD (mg / l)</b>	<b>COD (mg / l)</b>	<b>SS (mg / l)</b>	<b>TP (mg / l)</b>	<b>TN (mg / l)</b>	<b>Hydraulic Loading (m3/d)</b>	<b>Organic Loading (PE/Day)</b>
<b>Number of Samples</b>	12	12	12	12	12		
<b>Annual Max.</b>	494	955	264	12.2	90.5	4944	3,115
<b>Annual Mean</b>	198.63	425.48	114.83	4.78	37.52	513.41	1824.27

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

<b>2.2.1 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 NH3 (mg/l)</b>	<b>pH</b>
<b>WWDL ELV (Schedule A) where applicable</b>	25.00	125.00	35.00	ELV of 0.08 mg/l P will apply from the 31/12/19	ELV of 0.2mg/l N will apply from the 31/12/19	6 to 9
<b>ELV with Condition 2 Interpretation included</b>	50.00	250.00	87.50			No allowable exceedances
<b>Interim % Reduction (Schedule A)</b>						
<b>Number of sample results</b>	12	12	12	12	12	12
<b>Number of sample results above WWDL ELV</b>	0	0	0	N/A	N/A	0
<b>Number of sample results above ELV with Condition 2 Interpretation</b>	0	0	0	N/A	N/A	0
<b>Annual Mean (for parameters where a mean ELV applies)</b>						
<b>Overall Compliance (Pass/Fail)</b>	Pass	Pass	Pass			Pass

### Significance of results

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

### 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	E271593 N320439	RS36D020160					Moderate
Downstream Monitoring Point	E271517 N320395	RS36D020170	No	No	No	No	Moderate

The results for the upstream and downstream monitoring and/or additional monitoring data sets from Irish Water are included in the 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.
- The discharge from the wastewater treatment plant does have an observable negative impact on the water quality.
- The discharge from the WWTP doesn't have an observable negative impact on the Water Framework Directive status.
- Other potential causes of deterioration in water quality relevant to this area are unknown

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

The electronic submission of data was completed on 11/01/2017

### 2.5 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

	<b>cBOD (kg/yr)</b>	<b>COD (kg/yr)</b>	<b>SS (kg/yr)</b>	<b>Total P (kg/yr)</b>	<b>Total N (kg/yr)</b>
Influent mass loading (kg/year)	39,952	85,580	23,097	962	7,546
Effluent mass emission (kg/year)	916	4,845	1,486	884	7,037
% Efficiency (% reduction of influent load)	98%	94%	94%	8%	7%

### 3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

<b>Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)</b>	1,653
<b>Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)</b>	4,960
<b>Hydraulic Capacity – Current loading (m3/day)</b>	513
<b>Hydraulic Capacity – Remaining (m3/day)</b>	4,446
<b>Organic Capacity - Design / As Constructed (PE)</b>	7,823
<b>Organic Capacity - Current loading (PE)</b>	1,824
<b>Organic Capacity – Remaining (PE)</b>	5,999
<b>Will the capacity be exceeded in the next three years? (Yes / No)</b>	No
<b>Is an upgrade or expansion of the WWTP proposed? (i.e. if on Minor Programme or CIP) (Yes/No)</b>	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**

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

<b>Number of Complaints</b>	<b>Nature of Complaint</b>	<b>Number Open Complaints</b>	<b>Number Closed Complaints</b>
2	Investigation Sewage Flooding - Below Ground Waste Water	0	2
1	IFI re suspected leak from sewer line	1	0



### 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)
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**

<b>Number of Incidents in 2016</b>	0
<b>Number of Incidents reported to the EPA via EDEN in 2016</b>	0
<b>Explanation of any discrepancies between the two numbers above</b>	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	m3/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				
Industrial / Commercial Sludge	33	0.40				
Landfill Leachate (delivered by tanker)	0	0				
Landfill Leachate (delivered by sewer network)	0	0				
Other (specify)	1252 * Other Council WWTPs	15	0.66%	Yes	Yes	No

## Section 4. Infrastructure Assessments and Programme of Improvements

### 4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report is included in Appendix 7.3. 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 (m3)	Total volume discharged in 2016 (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	Unknown	Unknown	Unknown	Estimated

**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 2016?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Yes
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.

The Improvement Programme report included in Appendix 7.1 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	Licensee Timeframe for Completing the Work	Comments
Complete improvements to comply with ELV's specified in Schedule A: Discharges and Discharge Monitoring. Implement, in accordance with condition 5.6.1 either (a) improvements to the existing wastewater works to achieve compliance with the emission limit values specified in Schedule A.1: Primary Waste Water Discharge and Monitoring of this licence, or (b) an alternative primary discharge point or (c) connection to another agglomeration.	C	31/12/2019	No	Not started	0%		
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%		

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**

<b>The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:</b>	<b>Risk Assessment Rating (High, Medium, Low)</b>	<b>Risk Assessment Score</b>	<b>Reference to relevant section of AER (e.g. Appendix 2 Section 4).</b>	<b>Specified improvements</b>	<b>Comment</b>
<b>Hydraulic Risk Assessment Score</b>	High	125	Appendix 7.3 2016		
<b>Environmental Risk Assessment Score</b>	Low	225	Appendix 7.3 2016		
<b>Structural Risk Assessment Score</b>	High	105	Appendix 7.3 2016		
<b>Operation &amp; Maintenance Risk Assessment Score</b>	High	200	Appendix 7.3 2016		
<b>Overall Risk Score for the agglomeration</b>	High	655	Appendix 7.3 2016		

## 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	Yes	Yes	Appendix 7.5 AER 2016
Drinking Water Abstraction Point Risk Assessment	Required	Yes	No	Outstanding, to be completed 2017
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	Yes	There were no recommendations
Drinking Water Abstraction Point Risk Assessment	No	
Shellfish Impact Assessment	No	
Pearl Mussel Report	No	
Toxicity/Leachate Management	No	
Toxicity of Final Effluent Report	No	
Small Stream Risk Score Assessment		
Habitats Impact Assessment	No	

## 5.1 Priority Substances Assessment

The Priority Substances Assessment Report is included in the Appendix 7.5. A summary of the significance and operation 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>	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
<b>Does the assessment include a review of Trade inputs to the works?</b>	Desktop Study and Screening Analysis
<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>	Yes
<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>	No
<b>Status of any improvement measures required</b>	There were no recommendations



## **5.2 Drinking Water Abstraction Point Risk Assessment**

The Drinking Water Risk Assessment was not carried out for Ballybay and will be produced during 2017 following the SWO completion.

## 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)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	No
Ensure the following reports are included	Sewer Integrity Risk Assessment 2016
	Storm water overflow assessment 2016
	Priority substances assessment 2016

### 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: 31/07/2017

**Michael O'Leary**  
Head of Environmental Regulation

## Section 7. Appendices

### Appendix 7.1 Statement of Measures

1	Issue	Orthophosphate levels in the discharge from this plant exceed the UWWTD limits, reduced ELV for ortho p in 2019.
	Mitigation Measure	Provision of ferric dosing.
	Status	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
2	Issue	Ballybay Sludge Scrapers
	Mitigation Measure	Provide new sludge scrapers
	Status	Complete
3	Issue	Improved Operational Control
	Mitigation Measure	Flow monitoring at WWTP
	Status	Ballybay WWTP part of MN flow and Sampling Programme

### Specified Improvement Programme

#### Specified improvement Programme

Schedule C1 Specified Improvement Programme of the licence outlines the following improvements and the required completion date specified in the licence is the 31/12/19:

1. Complete improvements to comply with ELV's specified in Schedule A: Discharges and Discharge Monitoring. Implement, in accordance with condition 5.6.1 either (a) improvements to the existing wastewater works to achieve compliance with the emission limit values specified in Schedule A.1:Primary Waste Water Discharge and Monitoring of this licence, or (b) an alternative primary discharge point or (c) connection to another agglomeration.
2. Appropriate works to ensure compliance with the ELV's specified in Schedule A: Discharges and discharge monitoring

Under condition 5.2.1 of the licence, the programme of infrastructural improvements shall include an assessment of the wastewater treatment plant having regard to the effectiveness of the treatment provided by reference to the following:

(i) The capacity of the treatment plant and associated equipment:

The existing level of treatment is secondary. The WWTP was compliant with licence ELV's in 2016. The capacity of the treatment plant is currently adequate as outlined in section 3.2 of this report.

(ii)The emission limit values specified in Schedule A: Discharges and Discharge Monitoring

The WWTP was compliant with ELV's for 2016, however new ELV's for Ammonia 0.2mg/l N, Orthophosphate 0.08mg/l P and BOD 5mg/l will apply from the 31/12/19. Works will be required at the wwtp to ensure these ELV's can be met.

(iii) Designations of the receiving water body

Ballybay WWTP discharges to the Dromore River waterbody IE\_NW\_36\_30. The status of this waterbody is moderate. Upstream ambient monitoring in 2016 indicates contamination upstream of the plant. Ambient monitoring downstream of the plant shows an increase in orthophosphate levels. New stricter ELV's for cBOD, Ammonia and orthophosphate are due to commence on the 31/12/19. Ferric dosing will be required at the plant to meet the new ELV for ortho phosphate.

(iv) Downstream abstractions and uses of water

The Dromore river system is not a designated salmonid water but is a well known coarse fishery. White Lough, approximately 3.5km downstream is the water supply source for a Private Group Water Scheme. It is proposed to complete a drinking water risk assessment in 2017.

(v) Water Quality objective for the receiving water body:

The receiving water is located within waterbody IE\_NW\_36\_30, this water body has been classified as moderate in the final RBMP, 2009-2015.

(vi) The standards and volumetric limitations applied to any industrial wastewater that is licensed to discharge to the waste water works.

There are currently 2 companies licensed to discharge to the Ballybay WWTP.

Under Condition 5.2.2 of the licence, the programme of infrastructural improvements shall include an assessment of the integrity of the wastewater works having regard to :

(i) Capacity of the waste water works

The capacity of the wastewater treatment plant is currently adequate as outlined in Section 2.1 of this report.

(ii) Leaks from the waste water works

There are no known leaks from the waste water works

(iii) Misconnections between foul sewers and surface water drainage network

Any misconnections identified will be rectified.

(iv) Infiltration by surface water/ ground water

The sewer network integrity risk assessment has been included as part of this AER.

Under condition 5.2.3 of the licence the programme of improvements shall include an assessment of all storm water overflows associated with the wastewater works to determine effectiveness of their operation and in particular identify improvements necessary to comply with requirements of this licence:

A SWO assessment is included as an appendix to this AER.

## Appendix 7.2 Ambient Monitoring Results

Upstream Ballybay WWTP									
Sample Reference	Sample Date	Sample Method	Do mg/l	Temp °C	BOD mg/l	Ortho Phosphorus mg/l	Ammonia mg/l	Suspended Solids mg/l	pH units
92251/001	06/01/16	Grab	10.18	8.3	0.9	0.087	0.1	< 5	7.6
92980/001	02/02/16	Grab	11.74	8.2	18.5	0.083	0.4	12	7.6
93940/001	01/03/16	Grab	10.96	6.94	5.4	0.12	0.17	23	7.5
95197/001	06/04/16	Grab	11.08	9.9	2.9	0.086	0.019	9	8
96234/001	04/05/16	Grab	10.5	11.6	2.5	0.038	0.057	11	8.1
97739/001	14/06/16	Grab	7.82	17.6	6.1	0.094	0.055	7	7.8
98571/001	05/07/16	Grab	9.55	15.1	4.7	0.145	0.13	18	7.7
99853/001	10/08/16	Grab	8.92	15.2	5.4	0.091	0.015	< 5	8
100951/001	07/09/16	Grab		19.2	2.2	0.105	0.053	< 5	8.4
102392/001	11/10/16	Grab		10.6	2.6	0.066	0.033	10	8
103669/001	19/11/16	Grab		8.5	5.4	0.191	0.22	16	7.5
104771/001	05/12/16	Grab		8.1	1.2	0.078	0.032	7	7.9
		Average	10.09	11.60	4.81	0.098	0.107	12.55	7.84
Downstream Ballybay WWTP									
Sample Reference	Sample Date	Sample Method	Do mg/l	Temp °C	BOD mg/l	Ortho Phosphorus mg/l	Ammonia mg/l	Suspended Solids mg/l	pH units
92251/002	06/01/16	Grab	10.47	8.5	1.6	0.085	0.12	8	7.5
92980/002	02/02/16	Grab	11.66	8.3	6.1	0.081	0.15	9	7.7
93940/002	01/03/16	Grab	11.03	9.3	5.1	0.127	0.2	20	7.5
95197/002	06/04/16	Grab	11.12	9.5	2.4	0.047	0.082	11	8
96234/002	04/05/16	Grab	10.6	11.2	2.1	0.192	0.082	7	8
97739/002	14/06/16	Grab	7.95	17.3	2.5	0.196	0.11	< 5	7.8
98571/002	05/07/16	Grab	9.2	15.2	5.4	0.149	0.14	17	7.7
99853/002	10/08/16	Grab	8.97	14.6	2.5	0.3	0.056	6	7.9
100951/002	07/09/16	Grab		18.7	2.4	0.11	0.027	11	8.4
102392/002	11/10/16	Grab		10.8	4	0.717	0.007	13	7.9
103669/002	09/11/16	Grab		8.4	5.7	0.185	0.22	15	7.6
104771/002	05/12/16	Grab		8.3	2.3	0.046	0.024	6	7.9
		Average	10.125	11.67	3.50	0.1862	0.1015	11.18	7.82

## **Appendix 7.3 Sewer Integrity Risk Assessment 2016**

Section 1.1 Agglomeration Details		Ballybay				
Name		D0207-01				
Licence Number		D0207-01				
Insert Name of Catchment if the Risk Assessment is for part of an agglomeration (only divide agglomeration where p.e. >5,000p.e. and where such division is warranted)						
Date Licence Issued		14/04/2015				
Current Date		20/02/2017				
Waste Water Works - Wastewater Treatment Plant Details		Unit	Year 2015	Year 2016	Year 2017	Year 2018
1.1	Is there an existing WWTP in operation?		Yes	Yes	Yes	Yes
Section 1.2 BOD Loading & Population Equivalent						
1.2	Average Daily Influent Flow or Average Total Flow in system (If no measured data exists, insert estimated figure)	l/day, measured	652000	513400		
1.3	Average Daily Influent BOD or Average BOD Load from area served (If no measured data exists, insert estimated figure)	mg/l, measured	245	198		
1.4	Total BOD Load	kg/day	159.74	101.6532	0	0
1.5	Average Population Equivalent (@0.06kg/person/day)	p.e.	2662	1694	0	0
1.6	Estimated (existing) Non-Domestic Load	p.e.	1	1		
1.7	Estimated Domestic Load	p.e.	2661	1693	0	0
1.8	Occupancy Rate for the Agglomeration	pop/house	2.92	2.92		
1.9	Estimated Number of Connected Properties	houses	911	580	0	0
1.10	Number of properties within the agglomeration when compared with CSO Data or An Post Geodirectory	houses	1000	1000		
Section 1.3 Hydraulic Details						
1.11	Average Dry Weather Flow arriving at WWTP OR Total Average DWF in system (If no measured data exists insert estimated figure)	l/s, measured	10	3.166666667		
1.12	Estimated 3DWF	l/sec	30.00	9.50	0.00	0.00
1.13	Annual Average Peak Flow to WWTP or discharging from whole system if there is no existing WWTP	l/s, measured	185	21		
1.14	This Annual Average Peak as Multiples of Dry Weather Flow (Peaking Factor)	Nr	18.50	6.63	0.00	0.00
1.15	Highest Peak Flow Recorded (Insert UNKNOWN if no records exist)	l/s	1200	1200		
1.16	Does this Peak Flow (multiple of DWF) cause hydraulic capacity problems within the network ?	---	Yes	Yes	Yes	Yes
1.17	Total Rainfall for Previous Year	mm	1200	891		
1.18	Comparison - Mean Annual Rainfall for the agglomeration	mm	1100	1006.9		
1.18.1	Define the Weather Station Used		Ardfarmon	Ballyhaise		
1.19	If Storm Water Storage is available at the Wastewater Treatment plant, what is the volume of the storm tank ?	m <sup>3</sup>	600	600		
1.20	Is the capacity of the storm tank sufficient to capture and retain all overflows to the tank ?	---	No	No	No	No
1.21	Total monthly average volume of Storm Water Stored or Returned for Treatment within the Waste Water Treatment Plant	m <sup>3</sup> per month	1200	1200		
1.22	If the answer to 1.20 above is No, What is the estimated frequency of Overflows from the Storm Tank ? (N/A if no overflow)		> 5 times per month	> 5 times per month	1 to 2 times per month	< 1 per month
Waste Water Works - Sewer Network Details		Unit	2015	2016	2017	2018
Section 1.4 Waste Water Works - Gravity Sewer Details						
1.23	What database is used to maintain records of the sewer network		SUS 2001	Hard Copy Drawings only	SUS 2002	SUS 2003
1.23.1	If other or combination of the above please describe	Describe	SUS2000 & AutoCad	PDF and hard copy of drawings		
1.24	Total length of sewers (use drop down menus to define whether these figures are estimated or measured)	km Estimated	6.70	11.92	0.00	0.00
1.24.1	Total length of sewers > 450mm Diameter	km Estimated	0.50	1.75		
1.24.2	Total length of sewers > 300mm but ≤ 450mm in Diameter	km Estimated	4.00	3.75		
1.24.3	Total length of sewers > 225mm but ≤ 300mm in Diameter	km Measured	1.00	0.00		
1.24.4	Total length of sewers ≤ 225mm in Diameter	km Estimated	1.20	6.42		
1.24.5	Other	km Estimated	Unknown			
1.25	Pipeline Material					
1.25.1	What portion of the sewer network consists of Concrete Pipes	% Estimated	10%	17%		
1.25.2	What portion of the sewer network consists of Plastic Pipes	% Estimated	20%	50%		
1.25.3	What portion of the sewer network consists of Clay materials	% Estimated	30%	26%		
1.25.4	What portion of the sewer network consists of Brick Type Sewers	% Estimated	0%	0%		
1.25.5	What portion of the sewer network consists of Other Materials	% Estimated	40%	7%		



1.26	Total number of Storm Water Overflows	Nr	1	2		
1.27	What Screening or other mechanical devices are employed at the storm water overflows					
	SWO No. SW3 located at Lough Major	Describe		Low level weir		
	SWO No. SW4 located at Dromore River	Describe	Low level screened weir			
	SWO No. SW5 located at Lough Major	Describe	Low level screened weir			
1.28	Water Quality at the receiving waters					
1.28.1	Where the receiving water is a river - indicate the EPA Biological Rating of the Receiving Water for each SWO below (Particularly if there is more than one receiving water within the agglomeration)					
	SWO No. SW3 located at Lough Major	Describe	Select Q	Q2-Q3		
	SWO No. SW4 located at Dromore River	Describe	Select Q	Q2-Q3		
	SWO No. SW5 located at Lough Major	Describe	Select Q	Q2-Q3		
1.28.2	Where the receiving water is a coastal water indicate the Status of the Receiving Water for each SWO below (Particularly if there is more than one receiving water within the agglomeration)					
	SWO No. SW3 located at Lough Major	Describe	Select level	N/A		
	SWO No. SW4 located at Dromore River	Describe	Select level	N/A		
	SWO No. SW5 located at Lough Major	Describe	Select level	N/A		
1.28.3	With reference to the SWO's detailed above define if the receiving waters are sensitive in accordance with the Urban Wastewater Treatment Regulations as amended.					
	SWO No. SW3 located at Lough Major	Describe	Sensitivity?	Not Listed		
	SWO No. SW4 located at Dromore River	Describe	Sensitivity?	Not Listed		
	SWO No. SW5 located at Lough Major	Describe	Sensitivity?	Not Listed		
1.28.4	With reference to the SWO's detailed above define are the receiving waters Protected Areas (designated or awaiting designation)					
	SWO No. SW3 located at Lough Major	Designation		Not Listed		
	SWO No. SW4 located at Dromore River	Designation		Not Listed		
	SWO No. SW5 located at Lough Major	Designation		Not Listed		
1.28.5	With reference to the SWO's detailed above define do the receiving waters have any other designations.					
	SWO No. SW3 located at Lough Major	Designation		Not Listed		
	SWO No. SW4 located at Dromore River	Designation		Not Listed		
	SWO No. SW5 located at Lough Major	Designation		Not Listed		
<b>Section 1.5 Waste Water Works - Pumping Stations</b>						
1.29	Number of Pumping Stations (operated by the Local Authority)	Nr	10	9		
1.30	Total Length of Rising Mains (operated by the Local Authority)	km	1.2	1.6		
1.31	Rising Main Material					
1.31.1	What portion of the rising mains consists of ductile iron pipes	% Measured	100%	100%		
1.31.2	What portion of the rising mains consists of plastic pipes	% Measured	N/A			
1.31.3	What portion of the rising mains consists of other materials	% Estimated	N/A			
1.32	Discharge Capacity of the Pump Set (s) at normal duty point					
	At Pump Station at Carrickmacross PS			36 l/s		

	At Pump Station at Culbrannan PS			3 l/s		
	At Pump Station at Lakeview PS			6 l/s		
	At Pump Station at Lock Mor PS			9 l/s		
	At Pump Station at Meadowview PS			3 l/s		
	At Pump Station at The Alders PS			6 l/s		
	At Pump Station at Whyleys Hill PS			4 l/s		
	At Pump Station at Folly Court PS			N/A		
	At Pump Station at Main Lift WWTP PS			33		
1.33	What percentage of the pumping stations have recorded flow data (i.e. if all pumping stations have flow meters on the rising mains then this would read 100%)	%	0.00%			
1.34	Available Storage Capacity at Pump Stations (include pump sump and any storm water/emergency overflow tanks)					
	At Pump Station at Carrickmacross PS	m <sup>3</sup>	0	11.4		
	At Pump Station at Culbrannan PS	m <sup>3</sup>	0	11.3		
	At Pump Station at Lakeview PS	m <sup>3</sup>	0	7.3		
	At Pump Station at Lock Mor PS	m <sup>3</sup>	0	6.8		
	At Pump Station at Meadowview PS	m <sup>3</sup>	0	19.4		
	At Pump Station at The Alders PS	m <sup>3</sup>	0	28.6		
	At Pump Station at Whyleys Hill PS	m <sup>3</sup>	0	12.4		
	At Pump Station at Folly Court PS	m <sup>3</sup>	0	N/A		
	At Pump Station at Main Lift WWTP PS	m <sup>3</sup>	0	N/A		
1.35	Total Number of " <b>Licensed Secondary Discharge Points and Stormwater Overflows</b> " at pumping stations	Nr	1	0		
1.36	Total Number of " <b>Emergency Overflow Points</b> " at pumping stations	Nr	1	5		
1.37	What Screening or other mechanical devices are employed at the secondary discharge points or emergency overflows ?					
	At Pump Station at Culbrannan PS	Describe	e.g. 5mm Scee	unknown		
	At Pump Station at Lock Mor PS	Describe	e.g. 5mm scree	unknown		
	At Pump Station at Meadowview PS	Describe	e.g. 5mm scree	unknown		
	At Pump Station at Whyleys Hill PS	Describe	e.g. 5mm scree	unknown		
1.38	Water Quality at the receiving waters at each pumping station location					
1.38.1	Where the receiving water is a river - indicate the EPA Biological Rating of the Receiving Water for each secondary discharge point or emergency overflow at each pumping station (Particularly if there is more than one receiving water within the agglomeration)					
	At Pump Station at Lock Mor PS	Describe	Select Q	Q2-Q3		

1.38.2	Where the receiving water is a coastal water indicate the Status of the Receiving Water for each secondary discharge point or emergency overflow at each pumping station (Particularly if there is more than one receiving water within the agglomeration)					
	At Pump Station ___ at _____	Describe	Enter Status			
1.38.3	With reference to the pumping stations, for each secondary discharge point or emergency overflow detailed above, define if the receiving waters are sensitive in accordance with the Urban Wastewater Treatment Regulations as amended.					
	At Pump Station at Lock Mor PS		Sensitivity?	Not Listed		
1.38.4	With reference to the pumping stations, for each secondary discharge point or emergency overflow detailed above, are the receiving waters Protected Areas (designated or awaiting designation) .					
	At Pump Station at Lock Mor PS	Designation		Not Listed		
1.38.5	With reference to the pumping stations, for each secondary discharge point or emergency overflow detailed above, do the receiving waters have any other designations.					
	At Pump Station at Lock Mor PS	Designation		Not Listed		
1.39	Estimated Number of Private Pumping Stations within the agglomeration (not operated by the Local Authority)	Nr	1	1		
	<b>Section 1.6 Reporting</b>					
	<b>Section 1.6.1 Reported Number of Sewer Related Complaints</b> (‘Complaint’ as defined in the Discharge Licence)					
1.40	Number of Reported Complaints	Nr	2			
1.41	Number of Reported Complaints which have been rectified	Nr	2			
	<b>Section 1.6.2 Reported/Recorded/Estimated Number of Secondary Discharges</b>					
1.42	Number of Reported Secondary Discharges	Nr	1			
1.43	Number of Recorded Secondary Discharges	Nr	1			
1.44	Estimated Total Number of Secondary Discharges	Nr	2	0	0	0
	<b>Section 1.6.3 Reported/Recorded/Estimated Number of Emergency Overflow Discharges from Pumping Stations</b>					
1.45	Number of Reported Emergency Overflow Discharges	Nr	1			
1.46	Number of Recorded Emergency Overflow Discharges	Nr	1			
1.47	Estimated Total Number of Emergency Overflow Discharges	Nr	2	0	0	0
	<b>Section 1.7 Operational Staff</b>					
1.48	In the four boxes below, describe the extent of operation staff employed by the Local Authority to maintain and operate the sewer network and pumping stations <i>(The individual personnel shall not be named, only grade and level of training needs to be provided)</i>					
1.48.1	For example, 1 Nr. Fulltime Caretaker employed at General Operative Level (with basis H&S training) to operate & maintain the sewer network. 1 Nr. Part-time Caretaker employed as a Mechanical Fitter (FETAC Level 5) to operate & maintain the pumping stations.					
1.48.2						
1.48.3						
1.48.4						
	<b>Waste Water Works - Investment Details</b>	<b>Unit</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
	<b>Section 1.8 Capital Investment works carried out since most recent report (including works not included on WSIP Programme or not WSIP funded)</b>					
1.49	Sewers Upgraded or Replaced	m	30	0		
1.50	Sewers Rehabilitated	m	1500	0		
1.51	Manholes Rehabilitated	Nr				
1.52	Local Repairs	Nr				

1.53	Total Length of sewers Upgraded, Replaced or Rehabilitated	m	1530	0	0	0
1.54	Pumping Stations Operated by Local Authority Upgraded or Repaired	Nr	0	0		
1.55	WWTW operated by Local Authority Upgraded or Replaced	Nr	0	0		
1.56	In the following two cells describe the actual Capital Investment undertaken in the reporting period.					
1.56.1	For example : Sewer Rehabilitation Contract Works being undertaken under the WSIP					
1.56.2						
	<b>Section 1.9 Licence Specified Improvements Works</b>					
1.57	<i>The Local Authority is required to report on the extent of Improvement Works which have been specified under the Licence as issued by the EPA. Reference which AER contains this information</i>					
	<b>Section 1.10 Other Updates Since Last Report</b>					
1.58	<i>For example : 50% of the sewer network is currently being upgraded under the WSIP with an investment of €1.5m in 2010.</i>					
1.59	<i>For example : 2% of the sewer network is currently being replaced under the Local Authorities Annual Maintenance Fund</i>					
1.60						
1.61						
1.62						

Section 2.1 Hydraulic Risk Assessment					
Query	Description	Prompt	Risk Score	Short Commentary by the Local Authority	Comment or Action to be Taken
2.1	<u>Has a Hydraulic Performance Assessment been undertaken for the Sewer Network (e.g., Computer Model or other Engineering Design or Design Review) ?</u>	Yes	0		If the answer is <b>No</b> assess the need and cost benefit of developing a computer model or engineering design assessment of the Sewer Network and complete Query 2.12. If the answer is <b>Yes</b> proceed to Queries 2.1.1 to 2.1.4 inclusive
2.1.1	If Answer to Query 2.1 is Yes, what % of the Network is covered by the hydraulic assessment ?	N/A	0		The % coverage of the Network by the Hydraulic Assessment can be estimated by the area assessed against the area served by the Network. ENTER "N/A" IF COMPUTER MODEL or DESIGN DOES NOT EXIST. DO NOT LEAVE BLANK OR ENTER "0".
2.1.2	How many years has it been since the <b>completion</b> of the hydraulic assessment ?	more than 10	5		Select N/A response if no design assessment or design exists.
2.1.3	Are the outcomes of the Hydraulic Assessment being implemented ?	No	5		Select N/A response if no design assessment or design exists.
2.1.4	How many years has it been since the <b>outcomes</b> of the hydraulic assessment have been implemented ?	more than 10	5		Select N/A response if no hydraulic performance assessment or design exists. For onging works select "less than 5".
2.2	<u>Has a Dynamic Computer Model been used to Assess the Hydraulic Performance of the Sewer Network ?</u>	No	10		Computer Model means a Hydroworks/Infoworks Model, Micro-Drainage Model or equivalent.
2.3	<u>Has a Manhole Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Manhole Location Surveys and the Production of Record Maps" ?</u>	No	10		If the answer is <b>No</b> assess the need and cost benefit of undertaking a Manhole Survey and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.2.1
2.3.1	If yes, how many years has it been since the survey was undertaken or updated?	N/A	0		Select N/A if no Manhole Survey has been undertaken. Enter N/A value for Confidence Grade if Prompt Box is "N/A"
2.4	<u>Has a Flow Survey been undertaken in accordance with WRc Documentation "A Guide to Short Term Flow Surveys of Sewer Systems" and "Contract Documents for Short Term Sewer Flows" ?</u>	No	20		If the answer is <b>No</b> assess the need and cost benefit of undertaking a Flow Monitoring Survey and complete Query 2.12. . If answer is <b>Yes</b> Proceed to Query 2.5
2.5	<u>What was this Flow Survey Information Used for ?</u>				
2.5.1	To Determine the extent of Problematic Sewer Catchments	No	0		Select N/A if no Flow Survey has been undertaken.
2.5.2	To Verify a Computer or Mathematical Model of the Network	No	0		Select N/A if no Flow Survey has been undertaken.
2.6	<u>Have Performance Criteria been developed to determine the short, medium or long term capacity of the sewer network ?</u>	No	10		If the answer is <b>No</b> assess the Future Needs of the Sewer Network and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.8
2.7	<u>How many flood events resulting from surcharge in the network have occurred in the past 3 years?</u>	more than 6	10		Flood events in this context means water/sewage backing up from the Network causing flooding of properties or causing disruption of traffic
2.8	<u>Are there deficiencies in performance criteria within the sewer network ?</u>	Yes	20		If the answer is <b>No</b> , Proceed to Query 2.10 and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.9
2.9	<u>Have the causes of these deficiencies in the Performance Criteria been identified and rectified ?</u>	No	10		If the answer is <b>No</b> , consider further examination of the hydraulic model (if available) and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.10
2.10	<u>Can the Hydraulic Assessment (defined in Query 2.1 above) be used to determine the benefit of reducing the contributory Impermeable Areas or extent of surface water contributions</u>	No	10		If the answer is <b>No</b> , consider further development of the Hydraulic Assessment (or model if available) and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.11
2.11	<u>Has an Impermeable Area Survey been carried out for the agglomeration or parts of the agglomeration ?</u>	No	10		If the answer is <b>No</b> , consider the need and cost benefit of undertaking an Impermeable Survey for parts of the agglomeration which are under hydraulic pressure and complete Query 2.12. .
<b>Total Risk Assessment Score (RAS)</b>			<b>125</b>		
2.12	<u>Prepare Assessment of Needs &amp; Sewer Upgrade Implementation Plan</u>	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents			
2.13	In the AER provide Summary of Proposed Works or Direction to be taken to improve hydraulic efficiency				

Section 3.1 Environmental Risk Assessment					
Query	Description	Prompt	Risk Score	Short Commentary by the Local Authority	Comment or Action to be Taken
3.1	<a href="#">What Environmental or Discharge Quality Data is available with regard to the sewer network ?</a>	electronic or paper records exist but are >10 years old.	10		Select N/A if no discharges, secondary discharges or overflows from network; if discharges do exist complete Query 3.12
3.1.1	<a href="#">Do trade effluents discharge to the sewer network?</a>	Yes	20		If the answer is <b>No</b> , proceed to Query 3.1.2. If the answer is <b>Yes</b> , Proceed to Query 3.2
3.1.2	<a href="#">Are there Storm Water Overflows within the network ?</a>	Yes	20		If the answer is <b>No</b> , proceed to Query 3.1.3. If the answer is <b>Yes</b> , Proceed to Query 3.3
3.1.3	<a href="#">Are there Secondary Discharges within the network (excluding Emergency Overflows at Pump Stations)?</a>	Yes	20		If the answer is <b>No</b> , proceed to Query 3.1.4.
3.1.4	<a href="#">Is there any evidence that exfiltration is occurring from the network ?</a>	Unknown	20		If the answer is <b>No</b> , does all wastewater enter a wastewater treatment plant (insert summary details in the AER)? If <b>Yes</b> , Proceed to Query 3.6
3.2	<a href="#">If Answer to Query 3.1.1 is "Yes", what % of trade effluents have a licence to Discharge to the Public Sewer ?</a>	>90%	0		Select N/A if answer to Query 3.1.1 is <b>No</b> . If not all trade effluents are licenced, Local Authority should consider issuing and controlling such discharges under the appropriate Legislation.
3.2.1	<a href="#">Are all licenced trade Discharges compliant with their relevant licence and associated conditions</a>	No	10		Answer N/A if none of the trade effluents are licenced. Answer No if this information is unknown. If the answer is <b>Unknown</b> or <b>No</b> , consider issuing a direction to the relevant Licencee. If the answer is <b>Yes</b> , no further action is needed.
3.2.2	<a href="#">If Answer to Query 3.2.1 is "No", state what % of Trade Discharges are NOT compliant with their relevant licence and associated conditions (where that non-compliance led to enforcement action)</a>	51 - 75%	30		Select <b>N/A</b> if answer to Query 3.2.1 is Yes. If N/A is selected as answer to Query 3.2.2
3.3	<a href="#">In accordance with the DoEHLG paper "Procedures &amp; Criteria in relation to Storm Water Overflows", what % of storm water overflows in the system have been classified for their significance?</a>	<25%	50		If the answer is <b>No</b> , consider a review of each discharge within the sewer network complete and Query 3.11. If the answer is <b>Yes</b> , proceed to Query 3. 6
3.4	<a href="#">Have samples from any Secondary Discharges within the system been analysed ?</a>	Yes	0		Select N/A if no secondary discharges in system. If the answer to Query 3.4 is <b>No</b> , consider examining the quality of each secondary discharge within the sewer network complete Query 3.11. If the answer is <b>Yes</b> , proceed to Query
3.5	<a href="#">What percentage of discharges from the system are known to cause environmental pollution of the receiving waters ?</a>	None	0		If the answer is greater than 50% then detail, in the AER, the Improvement Programme necessary to reduce this percentage.
3.6	<a href="#">In relation to possible exfiltration has a risk analysis of ground water contamination or pollution been undertaken ?</a>	Yes	0		Select N/A if answer to Query 3.1.4 is <b>No</b> . If the answer is <b>No</b> , consider undertaking ground water risk analysis and complete Query 3.12 If the answer is <b>Yes</b> , proceed to Query 3.6
3.6.1	<a href="#">If Answer to Query 3.6 is "Yes", have any groundwater aquifers been identified in the area of the Network and/or Discharge Points?</a>	No	0		Select <b>N/A</b> if no risk analysis of groundwater contamination has been undertaken.
3.6.2	<a href="#">If Answer to Query 3.6.1 is "Yes", state the classification of groundwater aquifer identified in the area?</a>	N/A	0		Select <b>N/A</b> if no risk analysis of groundwater contamination has been undertaken.
3.6.3	<a href="#">In relation to Query 3.6.1, is the aquifer used as a source for Public, Private or Group Water Supply Schemes?</a>	N/A	0		Select <b>N/A</b> if no risk analysis of groundwater contamination has been undertaken.
3.7	<a href="#">Has an Impact Assessment of each Storm Water Overflow been undertaken in accordance with the DoEHLG paper "Procedures &amp; Criteria in relation to Storm Water Overflows" including setting performance criteria?</a>	Yes	0		If the answer is <b>No</b> , consider assessing the risk category of the receiving waters. If the answer is <b>Yes</b> , proceed to Query 3.8 and provide summary details of the assessment in the AER.
3.8	<a href="#">What percentage of storm water overflows comply with the performance criteria referred to in Query 3.7?</a>	N/A	30		Select N/A if answer to Query 3.7 is <b>No</b> or if there are no SWOs in system. <b>(Risk Score is locked at 0 if no SWOs in system is stated in Agglomeration Details)</b>
3.9	<a href="#">Have the causes of these Capacity Deficiencies (storm water overflows &amp; Secondary Discharges) been identified ?</a>	No	15		Select N/A if answer to Query 3.7 is <b>No</b> or if there are no SWOs in system. If the answer to Query 3.9 is <b>No</b> , consider further examination of the environmental model or assimilative model.
<b>Total Risk Assessment Score (RAS)</b>			<b>225</b>		
3.10	<a href="#">Prepare Assessment of Needs &amp; Sewer Upgrade Implementation Plan</a>	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents			
3.11	Provide Summary Details (in the AER) of records upstream and downstream of licenced discharges with regard to Environmental Performance of the network. These details can be included as part of the AER submitted for the agglomeration.				

Section 4.1 Structural Risk Assessment					
Query	Description	Prompt	Risk Score	Short Commentary by the Local Authority	Comment or Action to be Taken
4.1	<u>Has a CCTV Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Sewer Condition Inspections" and "Manual of Sewer Condition Classification" ?</u>	Yes	0		If the answer is <b>No</b> assess the need and benefit of undertaking CCTV Survey. If <b>Yes</b> Proceed to Query 4.2
4.1.1	How many years has it been since the completion of the CCTV Survey?	less than 5	0		If no CCTV has been undertaken, select "N/A" response
4.2	<u>What was this CCTV Survey Information Used for?</u>	N/A	10		Select N/A if answer to Query 4.1 is NO.
4.3	<u>Has the CCTV Survey been used to Assess the Structural Condition of the Sewer Network or targeted sections of the Sewer Network?</u>	No	5		If no CCTV has been undertaken, select "No" response. If the answer is <b>No</b> assess the need and benefit of undertaking an assessment of the Structural Condition of the Sewer Network. If the answer is <b>Yes</b> proceed to Q
4.4	<u>Have Performance Criteria been developed to determine the short, medium or long term structural condition of the sewer network ?</u>	No	5		If the answer is <b>No</b> , enter "unknown" in response to Queries 4.4.1 to 4.4.5; consider assessing the Future Needs of the Sewer Network. If the answer is <b>Yes</b> proceed to Queries 4
4.4.1	What % of the Total Sewer Length contains Collapsed or Imminent Collapse of Sewers (Grade 5)	unknown	30		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 5 collapse, include the total length of that sewer in calculating the %. If information is not available type "Unknown" into Prompt Box
4.4.2	What % of Total Sewer Length contains Sewers Likely to Collapse (Grade 4)	unknown	25		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 4 condition, include the total length of that sewer in calculating the %. If information is not available type "Unknown" into Prompt Box
4.4.3	What % of Total Sewer Length contains sewers with Further Possible Deterioration (Grade 3)	unknown	10		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 3 deterioration, include the total length of that sewer in calculating the %. If information is not available type "Unknown" into Prompt Box
4.4.4	What % of Total Sewer Length contains sewers with Minimal Collapse (Grade 2)	unknown	5		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 2 feature, include the total length of that sewer in calculating the %. If information is not available type "Unknown" into Prompt Box
4.4.5	What % of Total Sewer Length contains sewers of Acceptable Structural Condition (Grade 1)	unknown	5		Insert Percentage of Overall Network Length. If information is not available type "Unknown" into Prompt Box
<b>If all % lengths are known, Check Total Length = 100%</b>			<b>75</b>		If answers to Queries 4.4.1, 4.4.2 or 4.4.3 are above a set level, the RAS for Query 4 is automatically set at the maximum of 140.
4.5	<u>What % of the deficiencies, as detailed in Items 4.4.1, 4.4.2 and 4.4.3, have been rectified ?</u>	51 - 75%	10		Select N/A if answer to Query 4.4 is <b>No</b> . If the answer is <b>No</b> , Proceed to Query 4.6 If the answer is <b>Yes</b> , what monitoring is in place to ensure continued acceptance of structural condition? Proceed to Query 4.7
4.6	<u>Have the causes of the Structural Deficiencies (Grades 3, 4 and 5) been identified or is there a Preventative Maintenance Programme in place?</u>	Yes	0		If the answer is <b>No</b> , consider further examination of the sewer network, the structural loading conditions, gradients and possible H <sub>2</sub> S Formation. If Yes completed Query 4.7
<b>Total Risk Assessment Score (RAS)</b>			<b>105</b>		
4.7	<u>Prepare Assessment of Needs &amp; Sewer Rehabilitation Implementation Plan</u>	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents			

Section 5.1 O&M Risk Assessment					
Query	Description	Prompt	Risk Score	Short Commentary by the Local Authority	Comment or Action to be Taken
5.1	<u>Are complaints of an environmental nature recorded and held in a central database?</u>	No	20		Consider setting up Central Database for Complaints
5.2	<u>Is there an emergency response procedure in place?</u>	No	20		Consider setting up target response times for dealing with Complaints
5.3	<u>What has been the highest frequency of flooding in the network due to hydraulic inadequacy, over the past 5 years?</u>	More than 5 times/yr	20		Refers to flooding from the Network only, not natural flooding from rivers/streams/high tides. Select the highest number of events in any 12 month period.
5.4	<u>What has been the highest frequency of flooding in the network due to operational causes over the past 5 years?</u>	More than 5 times/yr	20		Refers to flooding from the Network only, not natural flooding from rivers/streams/high tides. Select the highest number of events in any 12 month period.
5.5	<u>What has been the highest frequency of surcharging of critical sewers in the network, over the past 5 years?</u>	More than 5 times/yr	20		Select the highest number of events in any 12 month period.
5.6	<u>What has been the highest frequency of reportable incidents in the network, over the past 5 years?</u>	More than 5 times/yr	20		Select the highest number of events in any 12 month period.
5.7	<u>What has been the highest frequency of reportable incidents due to discharges, for whatever reason, from Pumping Station Emergency Overflows in the network, over the past 5 years?</u>	More than 5 times/yr	20		Select the highest number of events at any given Pumping Station in any 12 month period.
5.8	<u>What has been the highest frequency of blockages in sewers in the network over the past 5 years?</u>	unknown	20		Select the highest number of events per km of sewer network in any 12 month period.
5.9	<u>What has been the highest frequency of collapses in sewers in the network over the past 5 years?</u>	More than 5 times/yr	20		Select the highest number of events in any 12 month period.
5.10	<u>What has been the highest frequency of bursts in rising mains in the network over the past 5 years?</u>	More than 5 times/yr	20		Select the highest number of events in any 12 month period.
<b>Total Risk Assessment Score (RAS)</b>			<b>200</b>		
5.11	<u>Prepare Up Dated Operational and Maintenance Plan</u>				



**Section 6.1 Summary of Risk Assessment**

Element	Risk Assessment Score	Risk Category
Section 2.1 Hydraulic Risk Assessment	125	High Risk
Section 3.1 Environmental Risk Assessment	225	Low Risk
Section 4.1 Structural Risk Assessment	105	High Risk
Section 5.1 O&M Risk Assessment	200	High Risk
<b>Total RAS for Network</b>	<b>655</b>	<b>High Risk</b>

If the total RAS is greater than 750, or if any of the individual RASs are greater than 75% of the Maximum Available Risk, the Risk category for the Network is graded "High Risk"

## Risk Scores

<b>% Risk Score</b>	<b>Maximum Risk Score</b>
<b>83%</b>	<b>150</b>
<b>45%</b>	<b>500</b>
<b>70%</b>	<b>150</b>
<b>100%</b>	<b>200</b>
<b>66%</b>	<b>1000</b>

ilable Score,

## Appendix 7.4 Storm water overflow assessment 2016

# Storm Water Overflow Assessment

<b>Agglomeration Name:</b>	<b>Ballybay and Environs</b>
<b>Licence Register No.</b>	<b>D0207-01</b>



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## 1 Introduction

This report has been prepared for D0207-01, Ballybay and Environs, in County Monaghan in accordance with the requirements of Condition 4.12 of the wastewater discharge licence for the agglomeration. This report identifies storm water overflows (SWO'S) within the agglomeration and assesses the compliance of the storm water overflows with the criteria set out in the DoEHLG document on 'Procedures and Criteria in Relation to Storm Water Overflows', 1995.

There are 3Nr. SWOs within the agglomeration. These are listed in Table 1 and shown in Figure 1.

**Table 1: Storm Water Overflows in the Agglomeration**

Licence Code	Discharge Location		Receiving Water Name and WFD Code	WFD Status of Receiving Water	Other designation of receiving water
	Easting	Northing			
SW003	272255	320504	Lough Major		Groundwater in nutrient sensitive area from <a href="http://gis.epa.ie/Envision">http://gis.epa.ie/Envision</a>
SW004	271947	320148	Dromore River IE_NW_36D020300	Poor	Groundwater in nutrient sensitive area from <a href="http://gis.epa.ie/Envision">http://gis.epa.ie/Envision</a>
SW005	271618	320369	Lough Major		Groundwater in nutrient sensitive area from <a href="http://gis.epa.ie/Envision">http://gis.epa.ie/Envision</a>



**Figure 1: Locations of SWO's in Ballybay**

A storm water overflow assessment is required to comply with the requirements of the wastewater discharge licence condition as detailed below.

#### **Condition 4.12 - Storm Water Overflows**

**4.12.1** *The licensee shall, prior to the date for submission of the second AER (required under Condition 6.8), carry out an investigation for the identification and assessment of storm water overflows. A report on the storm water overflows shall be submitted to the Agency as part of the second AER. All storm water overflows shall be in compliance with the criteria for storm water overflows, as set out in the DoEHLG Procedures and Criteria in Relation to Storm Water Overflows', 1995, and any other guidance as may be specified by the Agency.*

**4.12.2** *The licensee shall carry out an assessment of storm water overflows at least once every three years thereafter and report to the Agency on each occasion as part of the AER. The assessment shall include a determination of compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995, and any other guidance as may be specified by the Agency. The licensee shall maintain a written record of all assessments and remedial measures arising from the assessment.*

## **2 Storm Water Overflow Assessment**

### **2.1 Description of SWOs**

There are three known SWO's within the agglomeration of Ballybay and Environs; SW003 at Patricks Street, SW004 at Corrybrannan Bridge and SW005 located adjacent to the WWTP. Each SWO is described in detail below.

#### **SW003**

SW003 was not located during a site visit. From discussions with the caretaker of the plant, work took place on the network along the R162 to the north in approximately 2001 which divided the old combined sewer into separate foul and storm lines. The foul line was directed to the WWTP and the storm line was discharged to Lough Major. It is assumed SW003 operates for this storm sewer. During these works the manhole for the SW003 outfall was covered in **(Image 1)** and would require a machine to locate in the future. This location is not identified on the Irish Water ARCGIS online resource. An overflow line is shown in drawings received from the Local Authority but the line ends at the main road, with no indication of final outfall. No complaints have been made about this SWO. A mains sewer line was located in the proximity of the manhole which was approximately 2.6m deep **(Image 2)**. The caretaker had no information on this SWO in relation to size, condition, dry weather overflows or number of occurrences of overflows.



**Image 1: Approximate area of SW003**



**Image 2: Sewer adjacent to SW003 location**

### SW004

SW004 is located on Corrybrannan bridge on the south side of the town (**Image 3**). This overflow takes all combined flow from south of this point. The main line consists of a 375mm concrete pipe which takes the flow to the WWTP. There is a manual screen (**Image 4**) on the main line which overflows to the sump (approximately 1.5m deep) and discharges to the river. The overflow weir is approximately 150mm above the top of the inlet pipe. There is no flow meter on this SWO, no visual impact of the SWO and no complaints have been received.



**Image 3: Location of SW004**



**Image 4: Mains on left with screen on overflow**

### SW005

SW005 is located adjacent to the WWTP (**Image 5**) and overflows before the inlet screens of the plant. There is therefore no treatment or storage provided. The overflow location on the main line could not be accessed due to its location under the building. According to the National Urban Waste Water Study Catchment Report for Ballybay (Department of the Environment, Heritage and Local Government, 2004), the inlet weir allows for 60l/s into the plant with the remaining outflowing to



grass plots on the site. The overflow pipe consists of a 600mm concrete pipe, fitted with a plastic non-return valve at the outfall due to the levels of the water in the surrounding area which is marsh. Discharge to the receiving water of the Dromore River is approximately 150m from outfall through the low lying marsh area, allowing for partial treatment. There was evidence of pollution in the drain itself with sewerage fungus and a blue-white tint from the water. The final manhole prior to discharge (**Image 6**) is 1.5m deep. This is approximately 40m from the discharge location. A flow meter was installed in August 2016 for this line but was reading as DEAD on the SCADA system until October 2016. The total flow recorded for 2016 from October to December was 613.9m<sup>3</sup>. The caretaker indicated the SWO did not operate during dry weather flows. No complaints have been received in relation to this SWO.



**Image 5: Location of SW005**



**Image 6: Last manhole before SW005**

## 2.2 Assessment of Operating Criteria of SWOs

The following criteria for each SWO on the network have been examined in accordance with the assessment criteria set out in *Procedures and Criteria in Relation to Storm Water Overflows* in order to determine possible capacity constraints.

1. Does the SWO cause significant visual or aesthetic impact and public complaints
2. Does the SWO cause deterioration in water quality in the receiving water (i.e. is there a deterioration in ecological quality status attributable to the SWO)
3. Does the SWO gives rise to failure in meeting the requirements of national regulations on foot of EU Directives (e.g. bathing water quality standards, shellfish water quality standards, Water Framework Directive status etc.),
4. Does the SWO operate in dry weather.

**Table 2: Assessment of Operating Criteria**

CSO Ref	Causes significant visual or aesthetic impact and public complaints	Causes deterioration in water quality in the receiving water	Gives rise to failure in meeting the requirements of national Regulations on foot of EU Directives.	Operates in dry weather	Compliant / Non-Compliant
SW003	No	Unknown	Unknown	Unknown	Non-compliant as not located

SW004	No	Unknown	Unknown	Unknown	Compliant
SW005	No complaints from public but visual impact noted at discharge location adjacent to plant.	Discharge to receiving water is approximately 150m from outfall through low lying marsh area allowing for partial treatment	Unknown	No	Non-compliant

### 2.3 Assessment of Design Criteria of SWOs

#### 2.3.1 Compliance with Formula A

Formula A is used in the *Procedures and Criteria in Relation to Storm Water Overflows* as follows:-

$$\text{Formula A} = \text{DWF} + 1.36P + 2E \quad (\text{m}^3/\text{day})$$

*P* = design domestic population contributing to SWO (to be estimated)

*E* = design industrial effluent flow (estimated to be 20% of domestic PE unless otherwise by LA)

*DWF* = Dry weather flow  $\text{m}^3/\text{day}$  (dry weather flow of total PE, based on **0.175** $\text{m}^3/\text{PE}/\text{day}$ )

#### SW003

Formula A has not been calculated for SW003 since the SWO was not located.

#### SW004

Formula A for SW004 was calculated using an estimate of 30% (2,350 PE) of the total PE for the plant of 7,825 PE from the 2015 AER. This assumption was based on the location of the SWO within the network. Therefore Formula A is calculated as:

$$\text{Formula A} = 411 + 1.36(2,350) + 2(470) = 4,547 \text{ m}^3/\text{day} = 53 \text{ l/s}$$

From:

- P = 2,350
- E = 470 (20% of P)
- DWF = 411

As indicated in Section 2.1, the weir of the overflow is set approximately 150mm above the top of the incoming pipe. The width of the channel is equivalent to the incoming concrete pipe diameter of 375mm. The slope of the channel has been assumed to be approximately 1:100. Using this information the capacity of the channel has been estimated as approximately 97L/s. This has been used as the spill setting of the overflow.

The following table provides an estimate of the compliance of the exiting overflow to the 'Formula A' calculation.

Designation	Formula A flow (L/s)	Spill setting (L/s)	Compliance to DOEHLG
SW004	53	97	Compliant

#### SW005

Formula A for SW005 was calculated using the total PE of the plant (7,823 PE, from the 2015 AER) as it is located just before the inlet works. Therefore Formula A is calculated as:

$$\text{Formula A} = 1,360 + 1.36(7,823) + 2(1,565) = 15,129 \text{ m}^3/\text{day} = 175 \text{ l/s}$$

From:

- P = 7,823
- E = 1,565 (20% of P)
- DWF = 1,370

As indicated in Section 2.1, the inlet to the plant is set to approximately 60L/s, after which flow continues over the weir of the overflow. This has been used as the spill setting of the overflow.

The following table provides an estimate of the compliance of the exiting overflow to the 'Formula A' calculation.

Designation	Formula A flow (L/s)	Spill setting (L/s)	Compliance to DOEHLG
SW005	175	60	Non-Compliant

### 2.3.2 Significance of Spill

Monitoring information in relation to frequency and duration of all the overflows is not available. There is no monitoring at SW003 (not located) or SW004 (no flow meter). Monitoring information in relation to volume from the flow meter at SW005 is available from August 2016 and is recorded as 4,066m<sup>3</sup>, up to the date of the site visit which was carried out on 16<sup>th</sup> January 2017.

The significance of overflows to inland freshwaters has been assessed as follows:

<p><b>Low Significance:</b>            &gt;8:1 Dilutions in Receiving water (average SWO DWF / 95%ile river flow)            No interaction with other discharges</p>
<p><b>Medium Significance</b> - only if all these criteria apply.            Dilution &lt; 8 : 1            Limited or no interaction with other discharges            &gt; 2,000 population equivalent            Cyprinid fishery</p>
<p><b>High Significance</b> - only if all these criteria apply.            Dilution &lt; 2 : 1            Interaction with other discharges            &gt; 10,000 population equivalent            Cyprinid or salmonid fishery</p>

**Table 3: Assessment of Significance**

CSO Ref	Dilution	PE Range	Designation of Receiving Water	Significance
SW003	Unknown as into lake	Range: < 2,000 – 10,000 PE estimated from % of network to SWO as 780 PE (10%). SWO DWF = 0.0016 m <sup>3</sup> /s	None	Low
SW004	23	Range: 2,000 – 10,000	None	Low

		PE estimated from % of network to SWO as 2350 PE (30%) SWO DWF = 0.005 m <sup>3</sup> /s  95% flow = 0.116 m <sup>3</sup> /s		
SW005	2	Range: 2,000 – 10,000 PE = 7825 (from AER 2015) SWO DWF = 0.016 m <sup>3</sup> /s  95% flow = 0.031 m <sup>3</sup> /s	None	Low

#### 2.4 Assessment of Requirement for Storage

The necessity for a storm tank within the sewer network has been assessed based on available dilution as detailed in Table 3 (from Procedures and Criteria in Relation to Storm Water Overflows) included as Table 4 below. The requirement for a storm tank at a wastewater treatment plant shall be based on an overflow setting of 3 DWF.

**Table 4 – SDD Method Recommended Storage at Overflows<sup>1</sup>**

Dilution Factor <sup>2</sup>	Overflow Setting	Storage Tank
> 8	Formula A	None
> 6	Formula A + 455 P or Formula A	None 40 l/PE
> 4	Formula A	40 l/PE
> 2	Formula A	80 l/PE
> 1	Formula A	120 l/PE

1. Table 3 extracted from Procedures and Criteria in Relation to Storm Water Overflows

2. Dilution factor = 95%ile river flow / average DWF

**Table 5 – Stormwater Storage within Agglomeration**

CSO Ref	Dilution Factor <sup>1</sup>	Required Overflow Setting (l/s)	Actual Overflow Setting (l/s)	Required Storage Tank Volume (m <sup>3</sup> )	Actual Storage Tank Volume (m <sup>3</sup> )	Compliant / Non-Compliant
SW003	Unknown as into lake	Not calculated as inaccessible	Unknown	Unknown	0	Unknown
SW004	23	53	97	0	0	Compliant
SW005	2	Not calculated as inaccessible	60	1,260 (Formula A/12 hrs)	0	Non-Compliant

2. Dilution factor = 95%ile river flow / average DWF

### **3 Remedial Measures to Ensure Compliance**

#### **3.1 Specified Improvement and Improvement Programme Works**

There are no specified improvement works or improvement programmes relating to stormwater overflows.

#### **3.2 Additional Measures**

The additional measures required, identified in this report are as follows:

- Locate and identify condition and flow of SW003;
- Temporarily install a flow meter on SW004 to determine number and volume of overflows;
- Investigate spill settings on SW005 and determine if storm tank can be installed to reduce use of overflow.

### **References**

Department of the Environment, Heritage and Local Government, 2004. National Urban Waste Water Study Catchment Report for Ballybay. Downloaded 23<sup>rd</sup> January 2017 from <http://www.epa.ie/terminalfour/wwda/wwda-view-filter.jsp?regno=D0207-01&filter=c&docfilter=go>

## **Appendix 7.5 Priority substances assessment 2016**

# Priority Substances Assessment

<b>Agglomeration Name:</b>	<b>Ballybay</b>
<b>Licence Register No.</b>	<b>D0207-01</b>



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**Appendix 1 – Screening of Parameters for Priority**

**Appendix 2 – Priority Substance Screening Flowchart**

**Appendix 3 – Receiving Waters Priority Substance Data**



## 1 Introduction

This report has been prepared for D0207-01 Ballybay, in County Monaghan in accordance with the requirements of Condition 4.11 / of the wastewater discharge licence for the agglomeration.

This study has been undertaken to determine the necessity, if any, for analysis of the discharge to comply with the condition in the wastewater discharge licence based on the *Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*, issued by the EPA. Relevant inputs to the waste water works and estimates of emissions from the discharge point have been taken into account in the preparation of this report. Relevant inputs to the waste water works, any relevant measurements / calculations / estimates of emissions from the discharge point and any relevant measurements undertaken at representative downstream monitoring locations have been taken into account in the preparation of this report.

Details of the emissions concentration for the primary discharge and impact on the receiving water are included in Appendix 1.

## 2 Desktop Study

### 2.1 Assessment of Analysis Required

#### A. Review of all industrial inputs into WWTP

A list of all licensed and unlicensed industrial or trade effluent discharges, leachate discharges and other imports are included in Table 2.1 below. "Other Imports" includes any non-domestic imports to the WWTP.

**Table 2.1 – List of Non-Domestic Discharges to WWTP**

Licensee Name / Landfill Name /Other Imports	Type of Industry	Type of Licence (IED / IPPC / Section 16 / Unlicensed)	Potential Source of Dangerous / Priority Substances (Yes / No)	Dangerous / Priority Substances Monitoring Undertaken (Yes / No)
Kepak Limited	Meat Processing	IPPC	Yes	No
Burlton	Anodising/Dyeing Aluminium Frames	Section 16	Yes	No

Where the answer to "Potential Source of Dangerous Substances (Yes / No)" is Yes, Table 2.2 below has been completed for each industry/landfill/other import source.

**Table 2.2 – List of Dangerous or Priority Substances in Non-Domestic Discharges to WWTP**

Licensee Name	List Anticipated Dangerous Substances or state if unknown	Monitoring Undertaken (Yes / No)
Kepak Limited	Napthalene, Tricholoethylene, Cadmium	No

	and its compounds, hexachlorobenzene, Chromium (VI), Cypermethrin, Toluene, Xylene	
Burlton	VOC's , phenols , meatals	Yes

**B. Discharge monitoring**

The primary discharge has been analysed for priority substances.

Analysis data is included in Appendix 1 with details of the sample data and/or source of the data. Analysis data includes the full list of priority substances listed in the EPA's *Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*.

**C. Downstream monitoring location's participation in relevant monitoring programme**

Any analysis data available for a representative downstream monitoring location from the discharge point for the relevant parameters is included in Appendix 3 with details of the source of the data.

**2.2 Review outcome of Desktop study**

Following the desktop study, all parameters in Appendix 1 have been assessed to establish any potential impact on the receiving waters. A review of all non-domestic loads to the wastewater treatment plant is underway by Irish Water. A consultation process with the EPA is being undertaken by Irish Water to establish appropriate levels of monitoring for priority and dangerous substances nationally, taking into account the particular requirements of the Water Framework Directive. It is proposed that this review, in consultation with the EPA, will determine the scope of future Priority Substances monitoring at Irish Water WWTP's.

Priority substance concentrations in the primary discharge were available for all parameters based on either analysis or the EPA PRTR toolkit. This desktop study is considered to provide full characterisation of the wastewater.

**3 Assessment of Significance and Recommendations**

An assessment of the potential for impacts on receiving waters from priority substances in the primary discharge has been carried out. The assessment considers the primary discharge relevant to Environmental Quality Standards (EQS) for priority substances in surface waters, as set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

No parameters have been identified as potentially being higher than the required EQS following dilution therefore no impact on the receiving waters is anticipated.

Based on the assessment carried out it is not considered that any further sampling or analysis is required.

The EPA have prepared a report on priority substances, *An Inventory of Emissions to Waters in Ireland*. This document states that Ireland appears to have relatively few problems associated with the presence of Priority / Priority Hazardous substances in its surface waters. It identifies that wastewater discharges are a potential source of metals in receiving waters with lead being the main metal identified as associated with wastewater discharges. However, metals exceedences, in particular those for cadmium, lead, and nickel are primarily associated with areas of historic mining activity. Similarly PAH's have been identified in stormwater overflows but the most significant source is considered to be rainfall.

A consultation process with the EPA is proposed to be undertaken by Irish Water in 2016 to establish appropriate levels of monitoring for priority and dangerous substances, taking into account the particular requirements of the Water Framework Directive. This will allow a targeted monitoring programme to be undertaken in areas where priority substances have been identified or industrial discharges or imports provide a potential source, and where there is a shortfall of existing monitoring data.

<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 and Screening Analysis
<b>Does the assessment include a review of licensed / authorised inputs to the works?</b>	Yes
<b>Does the assessment include a review of other (unauthorised) 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

## Appendix 1 – Screening of Parameters for Priority Substances

AA: Annual Average

MAC: Maximum Allowable Concentration

EQS: Environmental Quality Standards

Dilution factor in receiving water:  $\_0.03\text{m}^3/\text{sec}$

No.	Compound	Group of compounds	AA-EQS Inland SW ( $\mu\text{g}/\text{l}$ )	AA-EQS Other SW ( $\mu\text{g}/\text{l}$ )	Measured Conc. ( $\mu\text{g}/\text{l}$ ) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
1	Benzene	VOCs	10	8	<0.1	Final Effluent 24 hr composite sample	10/08/16	No	No
2	Carbon tetrachloride	VOCs	12	12	<0.5	Final Effluent 24 hr composite sample	10/08/16	No	No
3	1,2-Dichloroethane	VOCs	10	10					
4	Dichloromethane	VOCs	20	20	<5	Final Effluent 24 hr composite sample	10/08/16	No	No
5	Tetrachloroethylene	VOCs	10	10	<0.1	Final Effluent 24 hr composite sample	10/08/16	No	No
6	Trichloroethylene	VOCs	10	10	<0.1	Final Effluent	10/08/16	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						24 hr composite sample			
7	Trichlorobenzenes	VOCs	0.4	0.4	<0.5	Final Effluent 24 hr composite sample	10/08/16	No	No
8	Trichloromethane	VOCs	2.5	2.5					
9	Xylenes (all isomers)	VOCs	10	10	<0.5	Final Effluent 24 hr composite sample	10/08/16	No	No
10	Ethyl Benzene	VOCs	n/a	n/a	<0.5	Final Effluent 24 hr composite sample	10/08/16	No	No
11	Toluene	VOCs	10	10	<0.5	Final Effluent 24 hr composite sample	10/08/16	No	No
12	Naphthlene <sup>1</sup>	PAHs	2	2	<2	Final Effluent 24 hr composite sample	10/08/16	No	No

<sup>1</sup> The EQS for these substances shall take effect from 22 December 2015

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
13	Fluoranthene <sup>1</sup>	PAHs	0.0063	0.0063	<1	Final Effluent 24 hr composite sample	10/08/16	No	No
14	Benzo[k]fluoranthene <sup>2</sup>	PAHs	MAC of 0.017	MAC of 0.017	<1	Final Effluent 24 hr composite sample	10/08/16	No	No
15	Benzo[g,h,i]perylene <sup>2</sup>	PAHs	MAC of $8.2 \times 10^{-3}$	MAC of $8.2 \times 10^{-4}$	<1	Final Effluent 24 hr composite sample	10/08/16	No	No
16	Indeno[1,2,3-c,d]pyrene <sup>2</sup>	PAHs			<1	Final Effluent 24 hr composite sample	10/08/16	No	No
17	Benzo[b]fluoranthene <sup>2</sup>	PAHs	MAC of 0.017	MAC of 0.017	<1	Final Effluent 24 hr composite sample	10/08/16	No	No
18	Benzo[a]pyrene	PAHs	$1.7 \times 10^{-4}$	$1.7 \times 10^{-4}$	<1	Final Effluent 24 hr composite sample	10/08/16	No	No
19	Di(2-ethylhexyl)phthalate	Plasticiser	1.3	1.3	<1	Final Effluent	10/08/16	No	No

<sup>2</sup> No indicative parameter is provided for this group of substances

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
	(DEHP)					24 hr composite sample			
20	Isodrin <sup>3</sup>	Pesticides	Σ=0.01	Σ=0.005	<0.004	Sample	10/08/16	No	No
21	Dieldrin <sup>3</sup>	Pesticides			<0.004	Sample	10/08/16	No	NO
22	Diuron	Pesticides	0.2	0.2	0.1	Final Effluent 24 hr composite sample	10/08/16	No	No
23	Isoproturon	Pesticides	0.3	0.3	<0.05	Final Effluent 24 hr composite sample	10/08/16	No	No
24	Atrazine	Pesticides	0.6	0.6	<0.02	Final Effluent 24 hr composite sample	10/08/16	No	No
25	Simazine	Pesticides	1	1	<0.02	Final Effluent 24 hr composite sample	10/08/16	No	No
26	Glyphosate	Pesticides	60	-	1.26	Final Effluent 24 hr composite	10/08/16	No	No

<sup>3</sup> Σ of Aldrin, Dieldrin, Endrin and Isodrin.

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						sample			
27	Mecoprop	Pesticides	n/a	n/a	<0.06	Final Effluent 24 hr composite sample	10/08/16	No	No
28	2,4-D	Pesticides	n/a	n/a	<0.05	Final Effluent 24 hr composite sample	10/08/16	n/a	n/a
29	MCPA	Pesticides	n/a	n/a	<0.05	Final Effluent 24 hr composite sample	10/08/16	n/a	n/a
30	Linuron	Pesticides	0.7	0.7	<0.09	Final Effluent 24 hr composite sample	10/08/16	No	No
31	Dichlobenil	Pesticides	n/a	n/a	<2	Final Effluent 24 hr composite sample		n/a	n/a
32	2,6-Dichlorobenzamide	Pesticides	n/a	n/a				n/a	n/a
33	PCBs	PCBs	n/a	n/a	Below limit of detection for all	Final Effluent 24 hr composite sample	10/08/16	No	No
34	Phenols (as Total C)	Phenols	8	8	<0.1	Final Effluent	10/08/16	No	No



No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						24 hr composite sample			
35	Lead	Metals	1.2	1.3	<0.9	Final Effluent 24 hr composite sample	10/08/16	No	No
36	Arsenic	Metals	25	20	1.1	Final Effluent 24 hr composite sample	10/08/16	No	No
37	Copper	Metals	5 or 30 <sup>2</sup>	5	0.013	Final Effluent 24 hr composite sample	10/08/16	No	No
38	Zinc	Metals	8 or 50 or 100 <sup>3</sup>	40	52	Final Effluent 24 hr composite sample	10/08/16	Yes	No
39	Cadmium	Metals	0.08 or 0.09 or 0.15 or 0.25 <sup>4</sup>	0.2	<0.3	Final Effluent 24 hr composite sample	10/08/16	No	No
40	Mercury	Metals	MAC of 0.07	MAC of 0.07	<0.06	Final Effluent 24 hr	10/08/16	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						composite sample			
41	Chromium Total	Metals	3.4	0.6	<3	Final Effluent 24 hr composite sample	10/08/16	No	Unknown
42	Selenium	Metals	n/a	n/a	<3	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
43	Antimony	Metals	n/a	n/a	1.1	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
44	Molybdenum	Metals	n/a	n/a	<3	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
45	Tin	Metals	n/a	n/a	<3	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
46	Barium	Metals	n/a	n/a	7.6	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
47	Boron	Metals	n/a	n/a	<0.5	Final Effluent	10/08/16	N/A	N/A

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						24 hr composite sample			
48	Cobalt	Metals	n/a	n/a	<3	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
49	Vanadium	Metals	n/a	n/a	<3	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
50	Nickel	Metals	4	8.6	3.3	Final Effluent 24 hr composite sample	10/08/16	No	No
51	Fluoride	General	500	1,500	0.43	Final Effluent 24 hr composite sample	10/08/16	No	No
52	Chloride	General	n/a	n/a	42mg/l	Final Effluent 24 hr composite sample	10/08/16	N/A	N/A
53	TOC	General	n/a	n/a	8.53	Final Effluent 24 hr	10/08/16	n/a	n/a

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured Conc. (µg/l) <sup>1</sup>	Data Source [Sample / PRTR / Other (state)]	Sample Date	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						composite sample			
54	Cyanide	General	10	10	<9	Final Effluent 24 hr composite sample	10/08/16	No	Unknown
	Conductivity	General	n/a	n/a	552	Final Effluent 24 hr composite sample	10/08/16	n/a	n/a
	Alkalinity Total (mg/l CaCO <sub>3</sub> )	General	n/a	n/a	60	Final Effluent 24 hr composite sample	10/08/16	n/a	n/a
	pH	General	n/a	n/a	7.9	Final Effluent 24 hr composite sample	10/08/16	n/a	n/a

Notes:

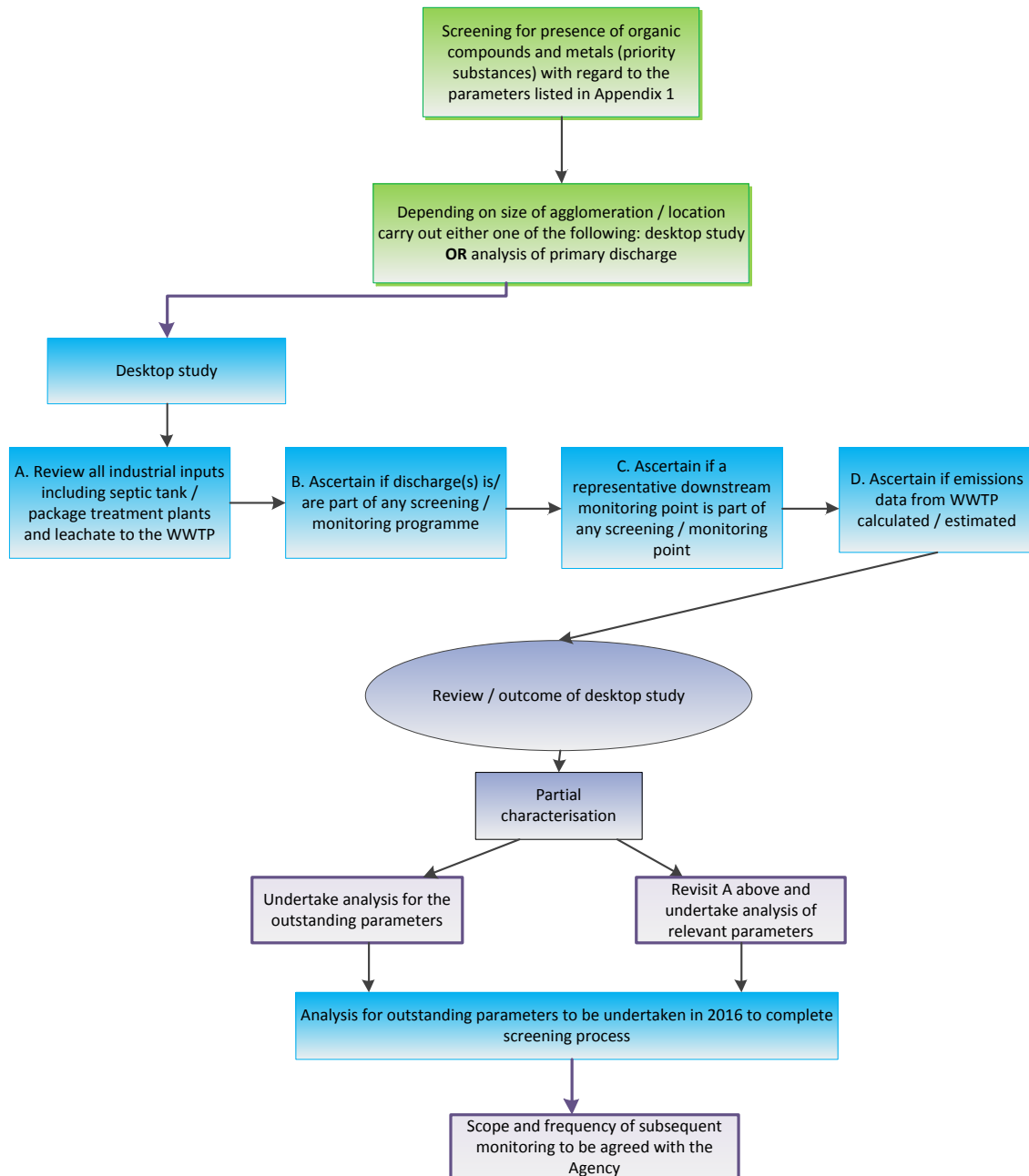
1. Where measured values are available these should be used instead of estimated values from PRTR tool.
2. In the case of Copper the value 5 applies where the water hardness measured in mg/l CaCO<sub>3</sub> is less than or equal to 100; the value 30 applies where the water hardness exceeds 100 mg/l CaCO<sub>3</sub>. Estimated CaCO<sub>3</sub> value > 100 where no sampling data available (based on PRTR tool)
3. In the case of Zinc, the standard shall be 8 µg/l for water hardness with annual average values less than or equal to 10 mg/l CaCO<sub>3</sub>, 50 µg/l for water hardness greater than 10 mg/l CaCO<sub>3</sub> and less than or equal to 100 mg/l CaCO<sub>3</sub> and 100 µg/l elsewhere. Estimated CaCO<sub>3</sub> value > 100 where no sampling data available

4. For Cadmium and its compounds the EQS values vary dependent upon the hardness of the water as specified in five class categories (Class 1: <40 mg CaCO<sub>3</sub>/l, Class 2: 40 to <50 mg CaCO<sub>3</sub>/l, Class 3: 50 to <100 mg CaCO<sub>3</sub>/l, Class 4: 100 to <200 mg CaCO<sub>3</sub>/l and Class 5: ≥200 mg CaCO<sub>3</sub>/l)

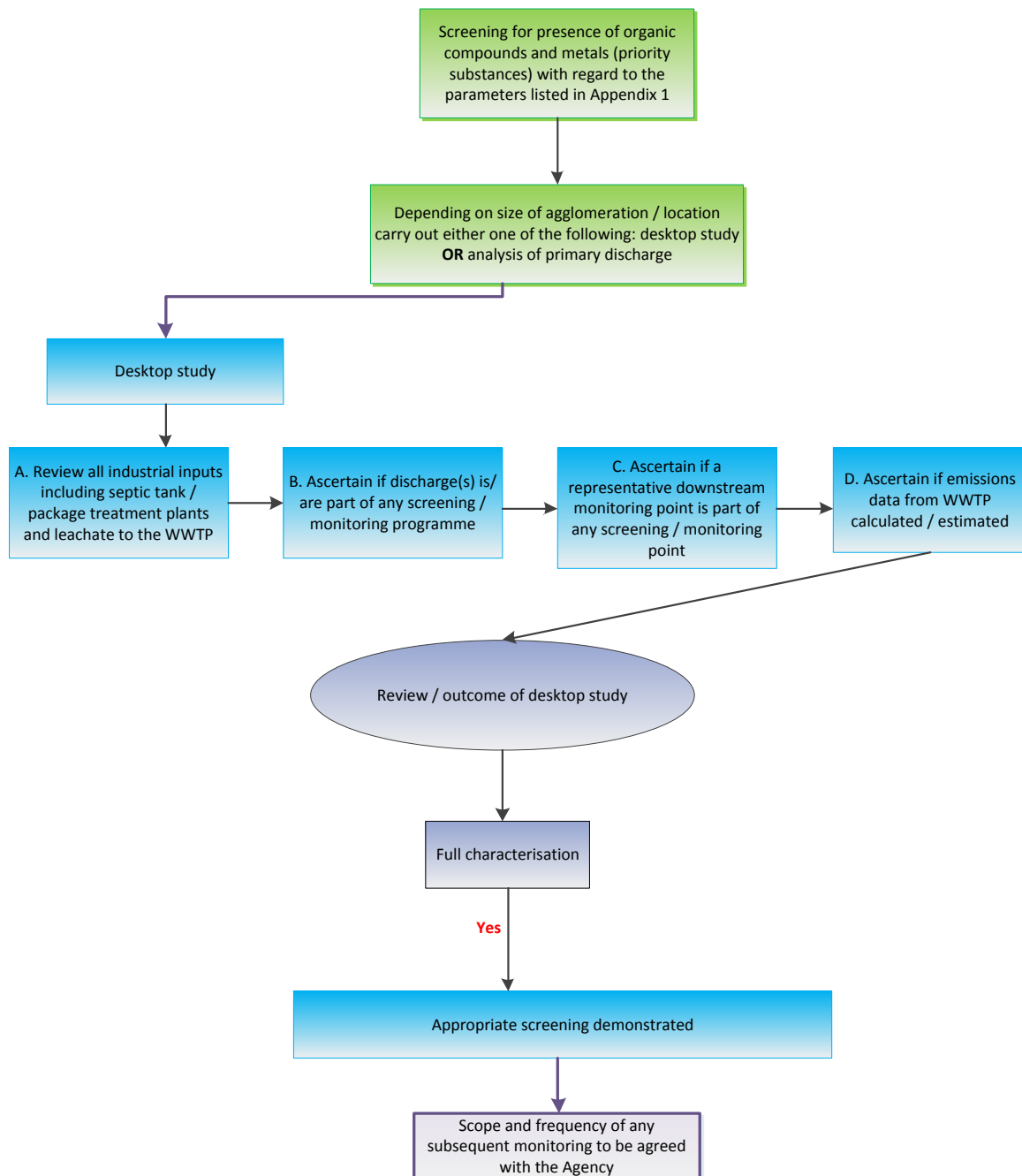
## Appendix 2 – Priority Substance Screening Flowchart

A flow chart for the screening of the presence of organic compounds and metals (Priority Substances) from WWTP is included below. This flowchart shows that appropriate screening has been demonstrated in line with the assessment undertaken in this report.

### Partial Characterisation



## Full Characterisation



### Appendix 3 – Receiving Waters Priority Substance Data

Data below extracted from White Lough Site 1 which is downstream of the wastewater treatment plant.

Results are based on 2010 monitoring data.

Parameter	Units	Min	Max	Average
1,4-Dichlorobenzene	µg/l	0.10	0.10	0.10
Alkalinity-total (as CaCO <sub>3</sub> )	mg/l	50.00	99.00	78.75
Aluminium - unspecified	µg/l	9.00	142.00	45.29
Ammonia-Total (as N)	mg/l	0.03	0.21	0.07
Arsenic - unspecified	µg/l	0.60	1.00	0.77
Barium - unspecified	µg/l	20.70	24.90	22.38
Boron - unspecified	µg/l	12.00	17.00	14.50
Calcium - unspecified	mg/l	19.20	32.50	26.33
Chlorophyll	µg/l	3.00	69.00	22.81
Cobalt - unspecified	µg/l	0.50	0.60	0.57
Conductivity @20°C	µS/cm	188.00	228.00	213.00
Conductivity @25°C	µS/cm	164.00	270.00	233.86
Copper - unspecified	µg/l	2.00	6.50	3.67
Dissolved Organic Carbon	mg/l	11.00	11.00	11.00
Dissolved Oxygen	% Saturation	46.00	128.00	89.27
Dissolved Oxygen	mg/l	6.10	13.50	9.78
Fluoride	mg/l	0.05	1.82	0.51
Hexachlorobutadiene	µg/l	0.10	0.10	0.10
Indeno(1,2,3-c,d)pyrene	µg/l	0.00	0.00	0.00
Iron - unspecified	µg/l	69.00	512.00	231.17
Lead - unspecified	µg/l	0.70	0.70	0.70
Magnesium - unspecified	mg/l	2.76	5.05	3.95
Manganese - unspecified	µg/l	32.00	357.00	147.08
meta + para-Xylene	µg/l	0.10	0.20	0.15
Molybdenum - unspecified	µg/l	0.50	0.50	0.50
Nickel - unspecified	µg/l	3.00	5.00	3.77
Nitrate (as N)	mg/l	0.10	0.70	0.37
Nitrite (as N)	mg/l	0.01	0.03	0.01
ortho-Phosphate (as P) - unspecified	mg/l	0.02	0.10	0.05
ortho-Xylene	µg/l	0.10	0.10	0.10
pH	pH units	7.00	8.60	7.74
Potassium - unspecified	mg/l	3.00	5.50	4.51
Silica (as Si)	mg/l	0.70	3.30	2.03
Silica (as SiO <sub>2</sub> )	mg/l	0.45	7.35	3.60
Sodium - unspecified	mg/l	6.20	11.10	8.88
Strontium - unspecified	µg/l	69.70	121.00	89.15



Sulphate	mg/l	6.80	15.50	11.24
Temperature	°C	0.80	25.30	12.37
Thorium - unspecified	µg/l	4.00	4.00	4.00
Toluene	µg/l	0.10	0.10	0.10
Total Oxidised Nitrogen (as N)	mg/l	0.10	1.40	0.71
Total Phosphorus (as P)	mg/l	0.04	0.18	0.08
Transparency	m	0.50	3.00	1.25
True Colour	Hazen/PtCo Units	20.00	95.00	47.83
Uranium - unspecified	µg/l	0.10	0.20	0.13
Zinc - unspecified	µg/l	2.00	23.20	7.03