

Annual Environmental Report 2016

Agglomeration Name:	Monaghan
Licence Register No.	D0061-01



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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 **D0061-01, Monaghan**, 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 in **Appendix 7.3**
- Priority substances assessment in **Appendix 7.4**

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 37,400. The treatment process includes the following:-

- Preliminary Treatment (Screening)
- Primary Treatment (Settlement)
- Secondary Treatment (Aeration)
- Nutrient Removal (Chemical dosing for phosphorus removal)

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

The following parameters exceeded the emission limit values in 2016:-

- Total P (mg/l)

2,936,720kgs total weight sludge was removed from the wastewater treatment plant in 2016 as dried cake. Sludge was transferred to the BioCore Sludge Treatment Centre in Co Meath where it is lime stabilised prior to landspreading.

The following improvement works were undertaken in 2016:-

Monaghan Sludge Dewatering Unit Installed 2016, at process proving stage.

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)	Organic Loading (PE/Day)
Number of Samples	25	25	25	25	25		
Annual Max.	377	1200	453	9	137.4	16,742.4	19,437
Annual Mean	162.54	463.63	186.99	3.19	41.35	3,768.00	10,557.73

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)	Total P (mg/l)	Ortho P (mg/l)	Ammonia NH3 (mg/l)	pH
WWDL ELV (Schedule A) where applicable	25 Note: New ELV for BOD of 3.5 mg/l will apply from the 31/12/19	125.00	25.00	2.00	0.1 ELV will apply from the 31/12/19. There is no interim ELV	0.2 ELV will apply from the 31/12/19. There is no interim ELV	6 to 9
ELV with Condition 2 Interpretation included	50.00	250.00	62.50	2.40			
Interim % Reduction (Schedule A)							
Number of sample results	25	25	25	25	25	25	25
Number of sample results above WWDL ELV	1	0	0	3	N/A	N/A	0
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	2	N/A	N/A	0
Annual Mean (for parameters where a mean ELV applies)							
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Fail			Pass

Significance of results

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. One sample was non-compliant with the ELVs in relation to Total P (mg/l). Issues with ferric dosing equipment was the cause of Total P exceedances in 2016.

07/06/16 - 2.64mg/l P outright breach of ELV for total P and 16/08/16 - 2.53 mg/l P outright breach of ELV for total P (ELV 1 of 2mg/l and ELV with condition 2 interpretation 2.4mg/l P). The impact on receiving waters is assessed further in Section 2.3.

2.3.1. Ambient Monitoring Summary

Table 2.3. Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status
Upstream Monitoring Point	267812E 333762N	RS03S010270					Poor
Downstream Monitoring Point	267939E 334666N	RS03S010400	No	No	No	No	Poor

The results for the upstream and downstream monitoring and/or additional monitoring data sets from Irish Water are included in Appendix 7.2.

Significance of results

- The WWTP was non-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.
- 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 11/01/2016

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

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

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)
Influent mass loading (kg/year)	231,214	659,506	265,986	4,544	58,824
Effluent mass emission (kg/year)	5,410	48,051	8,711	1,216	39,871
% Efficiency (% reduction of influent load)	98%	93%	97%	73%	32%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	7,944
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	37,008
Hydraulic Capacity – Current loading (m3/day)	3,768
Hydraulic Capacity – Remaining (m3/day)	33,240
Organic Capacity - Design / As Constructed (PE)	37,400
Organic Capacity - Current loading (PE)	10,558
Organic Capacity – Remaining (PE)	26,842
Will the capacity be exceeded in the next three years? (Yes / No)	No
Is an upgrade or expansion of the WWTP proposed? (i.e. if on Minor Programme or CIP) (Yes/No)	No

3.3 Extent of Agglomeration Summary Report

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

Table 3.3 - Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration	Estimated / Measured
Load generated in the agglomeration that is collected in the sewer network	100%	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
28	Investigation Sewage Flooding - Below Ground Waste Water	0	28

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)
Non Compliance	INCI010366 Outright breach of ELV for total P	Ferric dosing equipment offline.	1	No	Monitor total P levels	IFI	Yes	Yes
Non Compliance	INCI010725 Outright breach of ELV for total P	Ferric dosing equipment offline.	1	No	Ferric Dosing equipment but back online	IFI	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 2016	2
Number of Incidents reported to the EPA via EDEN in 2016	2
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

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

Table 3.6 - Other Inputs

Input Type	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	334	4	0.00%	Yes	Yes	No
Industrial / Commercial Sludge	16371 (WT P sludge's)	199	1.10%	Yes	Yes	No
Landfill Leachate (delivered by tanker)	37,392	455	2.70%	Yes	Yes	No
Landfill Leachate (delivered by sewer network)						
Other (specify)	10056 (other Council WWTP's)	122	0.73%	Yes	Yes	No

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

The Stormwater Overflow Assessment was submitted previously in AER 2015. 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
SW002	267845E 333776N	Yes	High	Compliant	Unknown	Unknown	Unknown	Estimated
SW003	267405E 333531N	Yes	High	Compliant	Unknown	Unknown	Unknown	Estimated
SW005	267123E 333596N	Yes	Medium	Non Compliant	Unknown	Unknown	Unknown	Estimated
SW006	266996E 333605N	Yes	Medium	Non Compliant	Unknown	Unknown	Unknown	Estimated
SW007	267045E 333500N	Yes	Medium	Non Compliant	Unknown	Unknown	Unknown	Estimated
SW008	267324E 333645N	Yes	Low	Non Compliant	Unknown	Unknown	Unknown	Estimated
SW009	267123E 333500N	Yes	High	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?	No
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
None							

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

Table 4.2.2 - Improvement Programme Summary

Improvement Identifier / Name	Improvement Description	Improvement Source	Progress (% complete)	Expected Completion Date	Comments
	Additional surveys to assess compliance required by the 2015 SWO assessment	SWO assessment (Condition 4 and 5.2)	0%	Unknown	Monaghan Drainage Area Plan at pre planning stage.
	Maintenance Shortfall	Improved Operational Control	0%	Unknown	Grit removal unit needs to be repaired. Agreed but not started
	Monaghan WWTP dewatering sludge upgrade	Improved Operational Control	100%		Complete 2016
	Flow monitoring and sampling MN	Improved Operational Control			Monaghan was part of the MN flow and Sampling programme for 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	150	Appendix 7.3 AER 2016		
Environmental Risk Assessment Score	Low	500	Appendix 7.3 AER 2016		
Structural Risk Assessment Score	High	150	Appendix 7.3 AER 2016		
Operation & Maintenance Risk Assessment Score	Medium	200	Appendix 7.3 AER 2016		
Overall Risk Score for the agglomeration	High	1000	Appendix 7.3 AER 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 7.4 AER 2016
Drinking Water Abstraction Point Risk Assessment	Not Required	No	No	
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	No further screening required
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 7.4. A summary of the significance and operation is included below:

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 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)	N/A
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	No further screening required
Status of any improvement measures required	

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?	Yes
Ensure the following reports are included	Sewer Integrity Risk 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: 28/02/2017

Elizabeth Arnett
Head of Corporate Affairs and Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures

1	Issue	To maintain processing levels of all incoming sludges
	Mitigation Measure	Upgrade sludge dewatering unit, capital project
	Status	Operational 2016, at process proving stage
2	Issue	Ferric dosing system not online
	Mitigation Measure	Replacement of ferric dosing equipment
	Status	Complete 2016
3	Issue	Failed asset screener
	Mitigation Measure	Replacement of gearbox and motor on 1 No screener
	Status	Complete 2016
4	Issue	Diffusers in aeration tank are ruptured and require replacement
	Mitigation Measure	Replacement of air blowers Monaghan
	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.
5	Issue	Measures identified in 2015 SWO assessment
	Mitigation Measure	Implement measures
	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.
6	Issue	Provide Sludge reception facilities, improved operational control
	Mitigation Measure	Monaghan WWTP Sludge reception facilities
	Status	Consultants have been appointed

Specified Improvement Programme

Schedule C1 Specified Improvement Programme of the licence states that there are” no specified improvement programmes required in this licence”.

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 with Nutrient Removal (Chemical dosing for P removal). The WWTP was compliant with the ELV's with the exception of 2 breaches of ELV for Total P in 2016, details of these incidents are outlined in Section 3.5 of the AER . 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 non compliant with the ELV for Total P on 2 occasions in 2016. All other parameters were in compliance with ELV's in 2016. New ELV's for Ammonia 0.2mg/l, ortho P 0.1mg/l and BOD 3.5mg/l will apply from the 31/12/19.

(ii) Designations of the receiving water body

Monaghan WWTP discharges to the Shambles River upstream of the WFD operational monitoring site 03B010500. There is a designated 'sensitive area' from the confluence of the Shambles & Blackwater to Newmills Bridge near Glaslough. The Shambles has impacted on water quality in the main Blackwater in the past but there are signs of improvements in recent years. Results for the Shambles for 2016 indicate contamination upstream of the WWTP discharge. Given the upstream values, the risks from Emergency Overflows, SWO and sewer integrity issues need to be kept under review. Limited assimilative capacity is available in the Shambles during low flows. Below the discharge, phosphate, ammonia and nitrogen levels are regularly elevated. New stricter ELV's for cBOD, Ammonia and orthophosphate are due to commence on the 31/12/19.

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

The receiving water is located within waterbody NB_03_479, this water body has been classified as poor and it has a Restore to Good Status by 2021 objective in the Neagh Bann International River Basin Management Plan.

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

There is currently 1 company licensed to discharge to the Monaghan 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

The Monaghan DAP (drainage area plan) is at pre planning stage.

(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:

This item is addressed in Appendix 7.4 – and based on the 2015 SWO assessment report.

Appendix 7.2 Ambient Monitoring Results

Upstream Monaghan WWTP									
Sample Date	Sample Method	Dissolved Oxygen mg/l	Temp	Total P mg/l	Total N mg/l	Ortho Phosphorus mg/l	Ammonia mg/l	pH units	BOD mg/l
03/02/16	Grab	8.6	7.2	0.07	1.3	0.053	0.24	7.8	<1
10/05/16	Grab	6.08	14.8	0.06	1.2	0.027	0.23	7.9	3.1
04/10/16	Grab	6.09	13.5	0.11	1.7	0.053	0.41	7.9	2.1
05/12/16	Grab	9.71	6.5	0.06	1.1	0.021	0.072	7.5	1.3
Average		7.62	10.5	0.075	1.325	0.038	0.238	7.77	1.87
Downstream Monaghan WWTP									
Sample Date	Sample Method	Dissolved Oxygen mg/l	Temp	Total P mg/l	Total N mg/l	Ortho Phosphorus mg/l	Ammonia mg/l	pH units	BOD mg/l
03/02/16	Grab	9.21	7.6	0.09	5.2	0.061	0.4	7.7	3.1
10/05/16	Grab	6.28	14.4	0.9	15.5	0.749	7.9	7.6	4.5
04/10/16	Grab	5.9	13.5	0.19	18.1	0.133	0.18	7.8	1.8
05/12/16	Grab	9.17	7.7	0.07	1.7	0.031	0.081	7.5	1.6
Average		7.64	10.8	0.312	10.125	0.243	2.14	7.65	2.75

Appendix 7.3 Sewer Integrity Risk Assessment 2016

Section 1.1 Agglomeration Details						
Name		Monaghan				
Licence Number		D0061-01				
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)		Monaghan				
Date Licence Issued		17/01/2014				
Current Date		28/11/2016				
Waste Water Works - Wastewater Treatment Plant Details		Unit	Year	Year	Year	Year
			2015	2016	2017	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	4381000	3768000		
1.3	Average Daily Influent BOD or Average BOD Load from area served (If no measured data exists, insert estimated figure)	mg/l, measured	171.4	162.54		
1.4	Total BOD Load	kg/day	750.9034	612.45072	0	0
1.5	Average Population Equivalent (@0.06kg/person/day)	p.e.	12515	10208	0	0
1.6	Estimated (existing) Non-Domestic Load	p.e.	742.8571429	742.8		
1.7	Estimated Domestic Load	p.e.	11772	9465	0	0
1.8	Occupancy Rate for the Agglomeration	pop/house	2.7	2.7		
1.9	Estimated Number of Connected Properties	houses	4360	3505	0	0
1.10	Number of properties within the agglomeration when compared with CSO Data or An Post Geodirectory	houses	2543	2543		
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	2.04	18.3		
1.12	Estimated 3DWF	l/sec	6.12	54.90	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	146.1226852	122		
1.14	This Annual Average Peak as Multiples of Dry Weather Flow (Peaking Factor)	Nr	71.63	6.67	0.00	0.00
1.15	Highest Peak Flow Recorded (Insert UNKNOWN if no records exist)	l/s	Unknown	146		
1.16	Does this Peak Flow (multiple of DWF) cause hydraulic capacity problems within the network ?	---	No	No	Yes	Yes
1.17	Total Rainfall for Previous Year	mm	1269	891		
1.18	Comparison - Mean Annual Rainfall for the agglomeration	mm	1006.9	1006.9		
1.18.1	Define the Weather Station Used		Ballyhaise	Ballyhaise		
1.19	If Storm Water Storage is available at the Wastewater Treatment plant, what is the volume of the storm tank ?	m ³	2270	2270		
1.20	Is the capacity of the storm tank sufficient to capture and retain all overflows to the tank ?	---	Yes	Yes	No	No
1.21	Total monthly average volume of Storm Water Stored or Returned for Treatment within the Waste Water Treatment Plant	m ³ per month	0	0		
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)		N/A	N/A	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		Autocad Drawings	Autocad Drawings	SUS 2002	SUS 2003
1.23.1	If other or combination of the above please describe	Describe				
1.24	Total length of sewers (use drop down menus to define whether these figures are estimated or measured)	km Estimated	11.20	11.20	0.00	0.00
1.24.1	Total length of sewers > 450mm Diameter	km Estimated	1.09	1.09		
1.24.2	Total length of sewers > 300mm but ≤ 450mm in Diameter	km Estimated	1.48	1.48		
1.24.3	Total length of sewers > 225mm but ≤ 300mm in Diameter	km Measured	7.15	7.15		
1.24.4	Total length of sewers ≤ 225mm in Diameter	km Estimated	1.48	1.48		
1.24.5	Other	km Estimated				
1.25	Pipeline Material					
1.25.1	What portion of the sewer network consists of Concrete Pipes	% Estimated	0%	0%		
1.25.2	What portion of the sewer network consists of Plastic Pipes	% Estimated	0%	0%		
1.25.3	What portion of the sewer network consists of Clay materials	% Estimated	0%	0%		
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	100%	100%		
1.26	Total number of Storm Water Overflows	Nr	7	7		

1.27	What Screening or other mechanical devices are employed at the storm water overflows					
	SW002 located at WWTP.	Describe	nd outflow to R.	nd outflow to R.	Shambles if storm exceeds ca	
	SW003 located at Old Cross Square PS	Describe	rges to R. Sharr	rges to R. Shambles.	(No known Pollution)	
	SW005 located at Dawson St	Describe	rges to R. Sharr	rges to R. Shambles.	(No known Pollution)	
	SW006 located at Park St	Describe	rges to R. Sharr	rges to R. Shambles.	(No known Pollution)	
	SW007 located at Market Road	Describe	rges to R. Sharr	rges to R. Shambles.	(No known Pollution)	
	SW008 located at Coothill Street	Describe	rges to R. Sharr	rges to R. Shambles.	(No known Pollution)	
	SW009 located at Dawson Street/Market Road	Describe	rges to R. Sharr	rges to R. Shambles.	(No known Pollution)	
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)					
	SW002 located at WWTP.	Describe	Q2-Q3	Q2-Q3		
	SW003 located at Old Cross Square PS	Describe	Q2-Q3	Q2-Q3		
	SW005 located at Dawson St	Describe	Q2-Q3	Q2-Q3		
	SW006 located at Park St	Describe	Q2-Q3	Q2-Q3		
	SW007 located at Market Road	Describe	Q2-Q3	Q2-Q3		
	SW008 located at Coothill Street	Describe	Q2-Q3	Q2-Q3		
	SW009 located at Dawson Street/Market Road	Describe	Q2-Q3	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)					
	SW002 located at WWTP.	Describe	N/A	N/A		
	SW003 located at Old Cross Square PS	Describe	N/A	N/A		
	SW005 located at Dawson St	Describe	N/A	N/A		
	SW006 located at Park St	Describe	N/A	N/A		
	SW007 located at Market Road	Describe	N/A	N/A		
	SW008 located at Coothill Street	Describe	N/A	N/A		
	SW009 located at Dawson Street/Market Road	Describe	N/A	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.					
	SW002 located at WWTP.	Describe	Sensitive	Sensitive		
	SW003 located at Old Cross Square PS	Describe	Sensitive	Sensitive		
	SW005 located at Dawson St	Describe	Sensitive	Sensitive		
	SW006 located at Park St	Describe	Sensitive	Sensitive		
	SW007 located at Market Road	Describe	Sensitive	Sensitive		
	SW008 located at Coothill Street	Describe	Sensitive	Sensitive		
	SW009 located at Dawson Street/Market Road	Describe	Sensitive	Sensitive		
1.28.4	With reference to the SWO's detailed above define are the receiving waters Protected Areas (designated or awaiting designation)					
	SW002 located at WWTP.	Designation	Not Listed	Not Listed		
	SW003 located at Old Cross Square PS	Designation	Not Listed	Not Listed		
	SW005 located at Dawson St	Designation	Not Listed	Not Listed		

	SW006 located at Park St	Designation	Not Listed	Not Listed		
	SW007 located at Market Road	Designation	Not Listed	Not Listed		
	SW008 located at Coothill Street	Designation	Not Listed	Not Listed		
	SW009 located at Dawson Street/Market Road	Designation	Not Listed	Not Listed		
1.28.5	With reference to the SWO's detailed above define do the receiving waters have any other designations.					
	SW002 located at WWTP.	Designation	Not Listed	Not Listed		
	SW003 located at Old Cross Square PS	Designation	Not Listed	Not Listed		
	SW005 located at Dawson St	Designation	Not Listed	Not Listed		
	SW006 located at Park St	Designation	Not Listed	Not Listed		
	SW007 located at Market Road	Designation	Not Listed	Not Listed		
	SW008 located at Coothill Street	Designation	Not Listed	Not Listed		
	SW009 located at Dawson Street/Market Road	Designation	Not Listed	Not Listed		
	^^ Receiving waters supposed cyprinid fishery, salmonid river (Blackwater) 1.5km d/s.	Designation				
	Section 1.5 Waste Water Works - Pumping Stations					
1.29	Number of Pumping Stations (operated by the Local Authority)	Nr	9	9		
1.30	Total Length of Rising Mains (operated by the Local Authority)	km	Unknown	Unknown		
1.31	Rising Main Material					
1.31.1	What portion of the rising mains consists of ductile iron pipes	% Measured	Unknown	Unknown		
1.31.2	What portion of the rising mains consists of plastic pipes	% Measured	Unknown	Unknown		
1.31.3	What portion of the rising mains consists of other materials	% Estimated	Unknown	Unknown		
1.32	Discharge Capacity of the Pump Set (s) at normal duty point					
	At Pump Station Old Cross Square at E267407 N333535		53	53		
	At Pump Station Corran at E267298 N331937		11	11		
	At Pump Station Ardglass at E267525 N333021		28	28		
	At Pump Station Old Armagh Road at E267733 N333764		39	39		
	At Pump Station Halting Site at E265457 N332258		Unknown	Unknown		
	At Pump Station Emyvale Road at E267881 N335404		17	17		
	At Pump Station Ballyalbany Bridge at E267487 N3352321		10	10		
	At Pump Station St Davnets at E268016 N334269		34	34		
	At Pump Station Knockroe Clones Road at E266008 N333459		Unknown	Unknown		
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%	0.00%		
1.34	Available Storage Capacity at Pump Stations (include pump sump and any storm water/emergency overflow tanks)					
	At Pump Station Old Cross Square at E267407 N333535	m ³	Unknown	Unknown		
	At Pump Station Corran at E267298 N331937	m ³	Unknown	Unknown		
	At Pump Station Ardglass at E267525 N333021	m ³	Unknown	Unknown		
	At Pump Station Old Armagh Road at E267733 N333764	m ³	1300	1300		
	At Pump Station Halting Site at E265457 N332258	m ³	Unknown	Unknown		
	At Pump Station Emyvale Road at E267881 N335404	m ³	Unknown	Unknown		
	At Pump Station Ballyalbany Bridge at E267487 N3352321	m ³	Unknown	Unknown		
	At Pump Station St Davnets at E268016 N334269	m ³	Unknown	Unknown		

	At Pump Station Knockroe Clones Road at E266008 N333459	m ³	Unknown	Unknown		
1.35	Total Number of " Licensed Secondary Discharge Points and Stormwater Overflows " at pumping stations	Nr	0	0		
1.36	Total Number of " Emergency Overflow Points " at pumping stations	Nr	7	7		
1.37	What Screening or other mechanical devices are employed at the secondary discharge points or emergency overflows ?					
	At Pump Station Old Cross Square at E267407 N333535	Describe	None	None		
	At Pump Station Corran at E267298 N331937	Describe	None	None		
	At Pump Station Ardglass at E267525 N333021	Describe	None	None		
	At Pump Station Old Armagh Road at E267733 N333764	Describe	None	None		
	At Pump Station Halting Site at E265457 N332258	Describe	None	None		
	At Pump Station Emyvale Road at E267881 N335404	Describe	None	None		
	At Pump Station Ballyalbany Bridge at E267487 N3352321	Describe	None	None		
	At Pump Station St Davnets at E268016 N334269	Describe	None	None		
	At Pump Station Knockroe Clones Road at E266008 N333459	Describe	None	None		
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 Old Cross Square at E267407 N333535	Describe	Q2-Q3	Q2-Q3		
	At Pump Station Corran at E267298 N331937	Describe	N/A	N/A		
	At Pump Station Ardglass at E267525 N333021	Describe	N/A	N/A		
	At Pump Station Old Armagh Road at E267733 N333764	Describe	Q2-Q3	Q2-Q3		
	At Pump Station Halting Site at E265457 N332258	Describe	N/A	N/A		
	At Pump Station Emyvale Road at E267881 N335404	Describe	Q2-Q3	Q2-Q3		
	At Pump Station Ballyalbany Bridge at E267487 N3352321	Describe	Q2-Q3	Q2-Q3		
	At Pump Station St Davnets at E268016 N334269	Describe	Q2-Q3	Q2-Q3		
	At Pump Station Knockroe Clones Road at E266008 N333459	Describe	N/A	N/A		
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 Old Cross Square at E267407 N333535	Describe	N/A	N/A		
	At Pump Station Corran at E267298 N331937	Describe	N/A	N/A		
	At Pump Station Ardglass at E267525 N333021	Describe	N/A	N/A		
	At Pump Station Old Armagh Road at E267733 N333764	Describe	N/A	N/A		
	At Pump Station Halting Site at E265457 N332258	Describe	N/A	N/A		
	At Pump Station Emyvale Road at E267881 N335404	Describe	N/A	N/A		
	At Pump Station Ballyalbany Bridge at E267487 N3352321	Describe	N/A	N/A		

	At Pump Station St Davnets at E268016 N334269	Describe	N/A	N/A		
	At Pump Station Knockroe Clones Road at E266008 N333459	Describe	N/A	N/A		
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 Old Cross Square at E267407 N333535		Sensitive	Sensitive		
	At Pump Station Corran at E267298 N331937		Not Listed	Not Listed		
	At Pump Station Ardglass at E267525 N333021		Not Listed	Not Listed		
	At Pump Station Old Armagh Road at E267733 N333764		Sensitive	Sensitive		
	At Pump Station Halting Site at E265457 N332258		Not Listed	Not Listed		
	At Pump Station Emyvale Road at E267881 N335404		Sensitive	Sensitive		
	At Pump Station Ballyalbany Bridge at E267487 N3352321		Sensitive	Sensitive		
	At Pump Station St Davnets at E268016 N334269		Sensitive	Sensitive		
	At Pump Station Knockroe Clones Road at E266008 N333459		Not Listed	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 Old Cross Square at E267407 N333535	Designation	No	No		
	At Pump Station Corran at E267298 N331937	Designation	No	No		
	At Pump Station Ardglass at E267525 N333021	Designation	No	No		
	At Pump Station Old Armagh Road at E267733 N333764	Designation	No	No		
	At Pump Station Halting Site at E265457 N332258	Designation	No	No		
	At Pump Station Emyvale Road at E267881 N335404	Designation	No	No		
	At Pump Station Ballyalbany Bridge at E267487 N3352321	Designation	No	No		
	At Pump Station St Davnets at E268016 N334269	Designation	No	No		
	At Pump Station Knockroe Clones Road at E266008 N333459	Designation	No	No		
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 Old Cross Square at E267407 N333535	Designation	No	No		
	At Pump Station Corran at E267298 N331937	Designation	No	No		
	At Pump Station Ardglass at E267525 N333021	Designation	No	No		
	At Pump Station Old Armagh Road at E267733 N333764	Designation	No	No		
	At Pump Station Halting Site at E265457 N332258	Designation	No	No		
	At Pump Station Emyvale Road at E267881 N335404	Designation	No	No		
	At Pump Station Ballyalbany Bridge at E267487 N3352321	Designation	No	No		
	At Pump Station St Davnets at E268016 N334269	Designation	No	No		
	At Pump Station Knockroe Clones Road at E266008 N333459	Designation	No	No		

1.39	Estimated Number of Private Pumping Stations within the agglomeration (not operated by the Local Authority)	Nr	0			
Section 1.6 Reporting						
Section 1.6.1 Reported Number of Sewer Related Complaints (‘Complaint’ as defined in the Discharge Licence)						
1.40	Number of Reported Complaints	Nr	4			
1.41	Number of Reported Complaints which have been rectified	Nr	4			
Section 1.6.2 Reported/Recorded/Estimated Number of Secondary Discharges						
1.42	Number of Reported Secondary Discharges	Nr	Unknown			
1.43	Number of Recorded Secondary Discharges	Nr	Unknown			
1.44	Estimated Total Number of Secondary Discharges	Nr	0	0	0	0
Section 1.6.3 Reported/Recorded/Estimated Number of Emergency Overflow Discharges from Pumping Stations						
1.45	Number of Reported Emergency Overflow Discharges	Nr	Unknown			
1.46	Number of Recorded Emergency Overflow Discharges	Nr	Unknown			
1.47	Estimated Total Number of Emergency Overflow Discharges	Nr	0	0	0	0
Section 1.7 Operational Staff						
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	Caretaker 4 is responsible for the maintenance and operation of the Monaghan network and WWTP.					
1.48.2	Caretaker operates under the supervision of a Line Manager Technician					
1.48.3	The Line Manager Technician is supervised by the Senior Executive Engineer					
1.48.4						
Waste Water Works - Investment Details		Unit	2015	2016	2017	2018
Section 1.8 Capital Investment works carried out since most recent report (including works not included on WSIP Programme or not WSIP funded)						
1.49	Sewers Upgraded or Replaced	m	0	0		
1.50	Sewers Rehabilitated	m	0	0		
1.51	Manholes Rehabilitated	Nr	0	0		
1.52	Local Repairs	Nr	0	0		
1.53	Total Length of sewers Upgraded, Replaced or Rehabilitated	m	0	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	<i>There were no major capital or operational changes undertaken in 2015.</i>					
1.56.2	<i>An Annual Statement of Measures is included in AER Report 2015.</i>					
Section 1.9 Licence Specified Improvements Works						
1.57	2015 AER, Appendix 7.3					
Section 1.10 Other Updates Since Last Report						
1.58						
1.59						
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	Has a Hydraulic Performance Assessment been undertaken for the Sewer Network (e.g., Computer Model or other Engineering Design or Design Review) ?	No	40		If the answer is No 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 Yes 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 completion of the hydraulic assessment ?	N/A	0		Select N/A response if no design assessment or design exists.
2.1.3	Are the outcomes of the Hydraulic Assessment being implemented ?	N/A	0		Select N/A response if no design assessment or design exists.
2.1.4	How many years has it been since the outcomes of the hydraulic assessment have been implemented ?	more than 10	0		Select N/A response if no hydraulic performance assessment or design exists. For ongoing works select "less than 5".
2.2	Has a Dynamic Computer Model been used to Assess the Hydraulic Performance of the Sewer Network ?	No	10		Computer Model means a Hydroworks/Infoworks Model, Micro-Drainage Model or equivalent.
2.3	Has a Manhole Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Manhole Location Surveys and the Production of Record Maps" ?	No	10		If the answer is No assess the need and cost benefit of undertaking a Manhole Survey and complete Query 2.12. If the answer is Yes 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	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" ?	No	20		If the answer is No assess the need and cost benefit of undertaking a Flow Monitoring Survey and complete Query 2.12. If answer is Yes Proceed to Query 2.5
2.5	What was this Flow Survey Information Used for ?				
2.5.1	To Determine the extent of Problematic Sewer Catchments	N/A	0		Select N/A if no Flow Survey has been undertaken.
2.5.2	To Verify a Computer or Mathematical Model of the Network	N/A	0		Select N/A if no Flow Survey has been undertaken.
2.6	Have Performance Criteria been developed to determine the short, medium or long term capacity of the sewer network ?	No	10		If the answer is No assess the Future Needs of the Sewer Network and complete Query 2.12. If the answer is Yes proceed to Query 2.8
2.7	How many flood events resulting from surcharge in the network have occurred in the past 3 years?	3 to 6	7		Flood events in this context means water/sewage backing up from the Network causing flooding of properties or causing disruption of traffic
2.8	Are there deficiencies in performance criteria within the sewer network ?	Yes	20		If the answer is No , Proceed to Query 2.10 and complete Query 2.12. If the answer is Yes proceed to Query 2.9
2.9	Have the causes of these deficiencies in the Performance Criteria been identified and rectified ?	No	10		If the answer is No , consider further examination of the hydraulic model (if available) and complete Query 2.12. If the answer is Yes proceed to Query 2.10
2.10	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	No	10		If the answer is No , consider further development of the Hydraulic Assessment (or model if available) and complete Query 2.12. If the answer is Yes proceed to Query 2.11
2.11	Has an Impermeable Area Survey been carried out for the agglomeration or parts of the agglomeration ?	No	10		If the answer is No , 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.
Total Risk Assessment Score (RAS)			147		
2.12	Prepare Assessment of Needs & Sewer Upgrade Implementation Plan	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	<u>What Environmental or Discharge Quality Data is available with regard to the sewer network ?</u>	largely anecdotal	20		Select N/A if no discharges, secondary discharges or overflows from network; if discharges do exist complete Query 3.12
3.1.1	<u>Do trade effluents discharge to the sewer network?</u>	Yes	20		If the answer is No , proceed to Query 3.1.2. If the answer is Yes , Proceed to Query 3.2
3.1.2	<u>Are there Storm Water Overflows within the network ?</u>	Yes	20		If the answer is No , proceed to Query 3.1.3. If the answer is Yes , Proceed to Query 3.3
3.1.3	<u>Are there Secondary Discharges within the network (excluding Emergency Overflows at Pump Stations)?</u>	No	0		If the answer is No , proceed to Query 3.1.4.
3.1.4	<u>Is there any evidence that exfiltration is occurring from the network ?</u>	Unknown	20		If the answer is No , does all wastewater enter a wastewater treatment plant (insert summary details in the AER)? If Yes , Proceed to Query 3.6
3.2	<u>If Answer to Query 3.1.1 is "Yes", what % of trade effluents have a licence to Discharge to the Public Sewer ?</u>	>90%	0		Select N/A if answer to Query 3.1.1 is No . If not all trade effluents are licenced, Local Authority should consider issuing and controlling such discharges under the appropriate Legislation.
3.2.1	<u>Are all licenced trade Discharges compliant with their relevant licence and associated conditions.</u>	Yes	0		Answer N/A if none of the trade effluents are licenced. Answer No if this information is unknown. If the answer is Unknown or No , consider issuing a direction to the relevant Licencee. If the answer is Yes , no further action is needed.
3.2.2	<u>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)</u>	N/A	0		Select N/A if answer to Query 3.2.1 is Yes . If N/A is selected as answer to Query 3.2.2
3.3	<u>In accordance with the DoEHLG paper "Procedures & Criteria in relation to Storm Water Overflows", what % of storm water overflows in the system have been classified for their significance?</u>	<25%	50		If the answer is No , consider a review of each discharge within the sewer network complete and Query 3.11. If the answer is Yes , proceed to Query 3.6
3.4	<u>Have samples from any Secondary Discharges within the system been analysed ?</u>	No	30		Select N/A if no secondary discharges in system. If the answer to Query 3.4 is No , consider examining the quality of each secondary discharge within the sewer network complete Query 3.11. If the answer is Yes , proceed to Query 3.5
3.5	<u>What percentage of discharges from the system are known to cause environmental pollution of the receiving waters ?</u>	None	0		If the answer is greater than 50% then detail, in the AER, the Improvement Programme necessary to reduce this percentage.
3.6	<u>In relation to possible exfiltration has a risk analysis of ground water contamination or pollution been undertaken ?</u>	N/A	0		Select N/A if answer to Query 3.6.1 is No . If the answer is No , consider undertaking ground water risk analysis and complete Query 3.12 If the answer is Yes , proceed to Query 3.6
3.6.1	<u>If Answer to Query 3.6 is "Yes", have any groundwater aquifers been identified in the area of the Network and/or Discharge Points?</u>	N/A	0		Select N/A if no risk analysis of groundwater contamination has been undertaken.
3.6.2	<u>If Answer to Query 3.6.1 is "Yes", state the classification of groundwater aquifer identified in the area?</u>	N/A	0		Select N/A if no risk analysis of groundwater contamination has been undertaken.
3.6.3	<u>In relation to Query 3.6.1, is the aquifer used as a source for Public, Private or Group Water Supply Schemes?</u>	N/A	0		Select N/A if no risk analysis of groundwater contamination has been undertaken.
3.7	<u>Has an Impact Assessment of each Storm Water Overflow been undertaken in accordance with the DoEHLG paper "Procedures & Criteria in relation to Storm Water Overflows" including setting performance criteria?</u>	No	40		If the answer is No , consider assessing the risk category of the receiving waters. If the answer is Yes , proceed to Query 3.8 and provide summary details of the assessment in the AER.
3.8	<u>What percentage of storm water overflows comply with the performance criteria referred to in Query 3.7?</u>	N/A	0		Select N/A if answer to Query 3.7 is No or if there are no SWOs in system. (Risk Score is locked at 0 if no SWOs in system is stated in Agglomeration Details)
3.9	<u>Have the causes of these Capacity Deficiencies (storm water overflows & Secondary Discharges) been identified ?</u>	No	15		Select N/A if answer to Query 3.7 is No or if there are no SWOs in system. If the answer to Query 3.9 is No , consider further examination of the environmental model, see legislative model.
Total Risk Assessment Score (RAS)			215		
3.10	<u>Prepare Assessment of Needs & Sewer Upgrade Implementation Plan</u>	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>	No	10		If the answer is No assess the need and benefit of undertaking CCTV Survey. If Yes Proceed to Query 4.2
4.1.1	How many years has it been since the completion of the CCTV Survey?	N/A	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 No assess the need and benefit of undertaking an assessment of the Structural Condition of the Sewer Network. If the answer is Yes 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 No , 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 Yes 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
If all % lengths are known, Check Total Length = 100%			75		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>	N/A	35		Select N/A if answer to Query 4.4 is No . If the answer is No , Proceed to Query 4.6 If the answer is Yes , 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>	N/A	0		If the answer is No , consider further examination of the sewer network, the structural loading conditions, gradients and possible H ₂ S Formation. If Yes completed Query 4.7
Total Risk Assessment Score (RAS)			140		
4.7	<u>Prepare Assessment of Needs & 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>	Yes	0		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>	4 times/yr	16		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>	None	0		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>	4 times/yr	15		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>	4 times/yr	15		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>	None	0		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>	Once/yr	4		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>	None	0		Select the highest number of events in any 12 month period.
Total Risk Assessment Score (RAS)			90		
5.11	<u>Prepare Up Dated Operational and Maintenance Plan</u>				

Section 6.1 Summary of Risk Assessment Scores

Element	Risk Assessment Score	Risk Category	% Risk Score	Maximum Risk Score
Section 2.1 Hydraulic Risk Assessment	147	High Risk	98%	150
Section 3.1 Environmental Risk Assessment	215	Low Risk	43%	500
Section 4.1 Structural Risk Assessment	140	High Risk	93%	150
Section 5.1 O&M Risk Assessment	90	Medium Risk	45%	200
Total RAS for Network	592	High Risk	59%	1000

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

Appendix 7.4 Priority substances assessment 2016

Priority Substances Assessment

Agglomeration Name:	Monaghan
Licence Register No.	D0061



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Appendix 2 – Priority Substance Screening Flowchart

Appendix 3 – Receiving Waters Priority Substance Data

1 Introduction

This report has been prepared for D0061, Monaghan town, in County Monaghan in accordance with the requirements of Condition 4.2 / Schedule D1 of the wastewater discharge licence for the agglomeration.

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)
Mallons Foods	Production, processing and preserving of meat and meat products	Section 16	Yes	No
Scotchcorner Landfill Site	Landfill Leachate	Waste Licence (tankered discharge)	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)
Landfill Leachate	Priority substances associated with the sector Lead, Nickel, Dieldrin, Cadmium, Mercury, Arsenic, Chromium, Copper, Cyanide, Flouride, Zinc	No
Production, processing and preserving of meat and meat products	Section 16	No
Hairdressers	Priority substances associated with the sector Nickel Cadmium	No
Garages and Filling Stations	Priority substances associated with the sector Benzene, Di (2-ethylhexyl) phthalate (DEHP), Lead and its compounds, Naphthalene, Nickel and its compounds, Cadmium and its compounds, Mercury and its compounds, Chromium (III), Copper	No
Dentists	Priority substances associated with the sector Octylphenols, Mercury	No
Hospital	Priority substances associated with the sector Dichloromethane	No
Dry Cleaners	Priority substances associated with the sector Di(2ethylhexyl) phthalate (DEHP)	No

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

Analysis data available for a representative downstream monitoring location from the discharge point for the relevant parameters is included in Appendix 3.

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.

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.

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	Screening Analysis
Does the assessment include a review of licensed / authorised inputs to the works?	Yes
Does the assessment include a review of other (unauthorised) 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)	N/A
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

Appendix 1 – Screening of Parameters for Priority Substances

AA: Annual Average

MAC: Maximum Allowable Concentration

EQS: Environmental Quality Standards

Dilution factor in receiving water: 0.03m³/s

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
1	Benzene	VOCs	10	8	<0.1	24 hour composite sample	10/08/16	No	No
2	Carbon tetrachloride	VOCs	12	12	<0.5	24 hour composite sample	10/08/16	No	No
3	1,2-Dichloroethane	VOCs	10	10	<0.1	24 hour composite sample	10/08/16	No	No
4	Dichloromethane	VOCs	20	20	<5	24 hour composite sample	10/08/16	No	No
5	Tetrachloroethylene	VOCs	10	10	<0.1	24 hour composite sample	10/08/16	No	No
6	Trichloroethylene	VOCs	10	10	<0.1	24 hour composite sample	10/08/16	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
7	Trichlorobenzenes	VOCs	0.4	0.4	<0.5	24 hour composite sample	10/08/16	No	No
8	Trichloromethane	VOCs	2.5	2.5	Not measured				
9	Xylenes (all isomers)	VOCs	10	10	<0.5	24 hour composite sample	10/08/16	No	No
10	Ethyl Benzene	VOCs	n/a	n/a	<0.5	24 hour composite sample	10/08/16	No	No
11	Toluene	VOCs	10	10	<0.5	24 hour composite sample	10/08/16	No	No
12	Naphthlene ¹	PAHs	2	2	<2	24 hour composite sample	10/08/16	No	No
13	Fluoranthene ¹	PAHs	0.0063	0.0063	<1	24 hour composite sample	10/08/16	No	No
14	Benzo[k]fluoranthene ²	PAHs	MAC of 0.017	MAC of 0.017	<1	24 hour composite sample	10/08/16	No	No

¹ The EQS for these substances shall take effect from 22 December 2015

² 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 /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
15	Benzo[g,h,i]perylene ²	PAHs	MAC of 8.2×10^{-3}	MAC of 8.2×10^{-4}	<1	24 hour composite sample	10/08/16	No	No
16	Indeno[1,2,3-c,d]pyrene ²	PAHs			<1	24 hour composite sample	10/08/16	No	No
17	Benzo[b]fluoranthene ²	PAHs	MAC of 0.017	MAC of 0.017	<1	24 hour composite sample	10/08/16	No	No
18	Benzo[a]pyrene	PAHs	1.7×10^{-4}	1.7×10^{-4}	<1	24 hour composite sample	10/08/16	No	No
19	Di(2-ethylhexyl)phthalate (DEHP)	Plasticiser	1.3	1.3	<1	24 hour composite sample	10/08/16	No	No
20	Isodrin ³	Pesticides	$\Sigma=0.01$	$\Sigma=0.005$	<4	24 hour composite sample	10/08/16	Unknown	
21	Dieldrin ³	Pesticides			<4	24 hour composite sample	10/08/16	Unknown	
22	Diuron	Pesticides	0.2	0.2	<0.13	24 hour composite sample	10/08/16	No	No
23	Isoproturon	Pesticides	0.3	0.3	<0.1	24 hour	10/08/16	No	No

³ 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 /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						composite sample			
24	Atrazine	Pesticides	0.6	0.6	<0.02	24 hour composite sample	10/08/16	No	No
25	Simazine	Pesticides	1	1	<0.04	24 hour composite sample	10/08/16	No	No
26	Glyphosate	Pesticides	60	-	0.69	24 hour composite sample	10/08/16	No	No
27	Mecoprop	Pesticides	n/a	n/a	Not measured				
28	2,4-D	Pesticides	n/a	n/a	Not measured			n/a	n/a
29	MCPA	Pesticides	n/a	n/a	Not measured			n/a	n/a
30	Linuron	Pesticides	0.7	0.7	<0.1	24 hour composite sample	10/08/16	No	No
31	Dichlobenil	Pesticides	n/a	n/a	7			n/a	n/a
32	2,6-Dichlorobenzamide	Pesticides	n/a	n/a	Not measured			n/a	n/a
33	PCBs	PCBs	n/a	n/a	Below limit of detection	24 hour composite sample	10/08/16	No	No
34	Phenols (as Total C)	Phenols	8	8	<0.1	24 hour	10/08/16	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						composite sample			
35	Lead	Metals	1.2	1.3	<0.9	24 hour composite sample	10/08/16	No	No
36	Arsenic	Metals	25	20	1.3	24 hour composite sample	10/08/16	No	No
37	Copper	Metals	5 or 30 ²	5	0.014	24 hour composite sample	10/08/16	No	No
38	Zinc	Metals	100	40	22	24 hour composite sample	10/08/16	No	No
39	Cadmium	Metals	0.08 or 0.09 or 0.15 or 0.25 ⁴	0.2	<0.3	24 hour composite sample	10/08/16	No	No
40	Mercury	Metals	MAC of 0.07	MAC of 0.07	<0.06	24 hour composite sample	10/08/16	No	No
41	Chromium	Metals	3.4	0.6	<3	24 hour composite sample	10/08/16	No	No
42	Selenium	Metals	n/a	n/a	<3	24 hour composite sample	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 /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
43	Antimony	Metals	n/a	n/a	0.7	24 hour composite sample	10/08/16	N/A	N/A
44	Molybdenum	Metals	n/a	n/a	<3.0	24 hour composite sample	10/08/16	N/A	N/A
45	Tin	Metals	n/a	n/a	<3.0	24 hour composite sample	10/08/16	N/A	N/A
46	Barium	Metals	n/a	n/a	21.6	24 hour composite sample	10/08/16	N/A	N/A
47	Boron	Metals	n/a	n/a	<0.5	24 hour composite sample	10/08/16	N/A	N/A
48	Cobalt	Metals	n/a	n/a	<3.0	24 hour composite sample	10/08/16	N/A	N/A
49	Vanadium	Metals	n/a	n/a	<3.0	24 hour composite sample	10/08/16	N/A	N/A
50	Nickel	Metals	4	8.6	3.2	24 hour composite sample	10/08/16	No	No
51	Fluoride	General	500	1,500	0.36	24 hour composite sample	10/08/16	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Measured /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
52	Chloride	General	n/a	n/a	130	24 hour composite sample	10/08/16	N/A	N/A
53	TOC	General	n/a	n/a	15.39	24 hour composite sample	10/08/16	n/a	n/a
54	Cyanide	General	10	10	<9	24 hour composite sample	10/08/16	No	No
	Conductivity	General	n/a	n/a	979	24 hour composite sample	10/08/16	n/a	n/a
	Alkalinity(mg/l CaCO ₃)	General	n/a	n/a	145	24 hour composite sample	10/08/16	n/a	n/a
	pH	General	n/a	n/a	8.4	24 hour composite sample	10/08/16	n/a	n/a

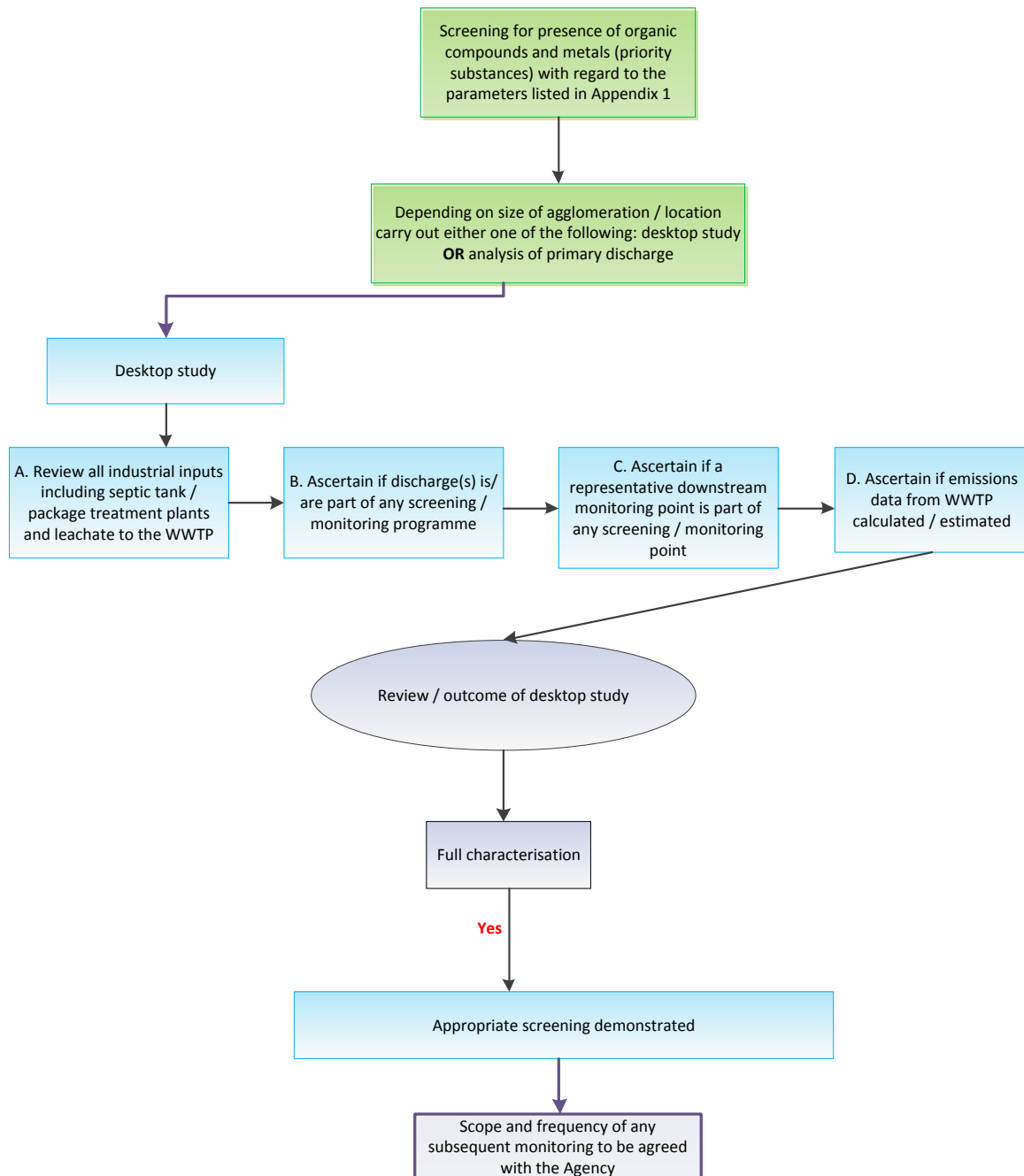
Notes:

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 CaCO₃ is less than or equal to 100; the value 30 applies where the water hardness exceeds 100 mg/l CaCO₃. Estimated CaCO₃ 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 CaCO₃, 50 µg/l for water hardness greater than 10 mg/l CaCO₃ and less than or equal to 100 mg/l CaCO₃ and 100 µg/l elsewhere. Estimated CaCO₃ 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 CaCO₃/l, Class 2: 40 to <50 mg CaCO₃/l, Class 3: 50 to <100 mg CaCO₃/l, Class 4: 100 to <200 mg CaCO₃/l and Class 5: ≥200 mg CaCO₃/l)

Appendix 2 – Priority Substance Screening Flowchart

Full Characterisation



Appendix 3 – Receiving Waters Priority Substance Data

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	Measured /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)
1	Benzene	VOCs	10	<0.1	Downstream Grab Sample	10/08/16
2	Carbon tetrachloride	VOCs	12	<0.5	Downstream Grab Sample	10/08/16
3	1,2-Dichloroethane	VOCs	10	<0.1	Downstream Grab Sample	10/08/16
4	Dichloromethane	VOCs	20	<5	Downstream Grab Sample	10/08/16
5	Tetrachloroethylene	VOCs	10	0.2	Downstream Grab Sample	10/08/16
6	Trichloroethylene	VOCs	10	<0.1	Downstream Grab Sample	10/08/16
7	Trichlorobenzenes	VOCs	0.4	<0.5	Downstream Grab Sample	10/08/16
8	Trichloromethane	VOCs	2.5	Not measured		
9	Xylenes (all isomers)	VOCs	10	<0.5	Downstream Grab Sample	10/08/16
10	Ethyl Benzene	VOCs	n/a	<0.5	Downstream Grab Sample	10/08/16
11	Toluene	VOCs	10	<0.5	Downstream Grab Sample	10/08/16
12	Naphthlene ⁴	PAHs	2	<0.010	Downstream Grab Sample	10/08/16
13	Fluoranthene ¹	PAHs	0.0063	<0.010	Downstream Grab Sample	10/08/16
14	Benzo[k]fluoranthene ⁵	PAHs	MAC of 0.017	<0.010	Downstream Grab Sample	10/08/16
15	Benzo[g,h,i]perylene ²	PAHs	MAC of 8.2×10^{-3}	<0.010	Downstream Grab Sample	10/08/16
16	Indeno[1,2,3-c,d]pyrene ²	PAHs		<0.005	Downstream Grab Sample	10/08/16
17	Benzo[b]fluoranthene ²	PAHs	MAC of 0.017	<0.010	Downstream Grab Sample	10/08/16
18	Benzo[a]pyrene	PAHs	1.7×10^{-4}	<0.003	Downstream Grab Sample	10/08/16
19	Di(2-ethylhexyl)phthalate (DEHP)	Plasticiser	1.3	Not measured	Downstream Grab Sample	10/08/16
20	Isodrin ⁶	Pesticides		<4	Downstream	10/08/16

⁴ The EQS for these substances shall take effect from 22 December 2015

⁵ No indicative parameter is provided for this group of substances

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	Measured /Estimated Conc. (µg/l) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)
			Σ=0.01		Grab Sample	
21	Dieldrin ³	Pesticides		<4	Downstream Grab Sample	10/08/16
22	Diuron	Pesticides	0.2	0.051	Downstream Grab Sample	10/08/16
23	Isoproturon	Pesticides	0.3	<0.005	Downstream Grab Sample	10/08/16
24	Atrazine	Pesticides	0.6	<0.005	Downstream Grab Sample	10/08/16
25	Simazine	Pesticides	1	0.020	Downstream Grab Sample	10/08/16
26	Glyphosate	Pesticides	60	0.433	Downstream Grab Sample	10/08/16
27	Mecoprop	Pesticides	n/a	0.384	Downstream Grab Sample	10/08/16
28	2,4-D	Pesticides	n/a	<0.005	Downstream Grab Sample	10/08/16
29	MCPA	Pesticides	n/a	0.016	Downstream Grab Sample	10/08/16
30	Linuron	Pesticides	0.7	<0.005	Downstream Grab Sample	10/08/16
31	Dichlobenil	Pesticides	n/a	5		
32	2,6-Dichlorobenzamide	Pesticides	n/a	Not measured		
33	PCBs	PCBs	n/a	Below limit of detection	Downstream Grab Sample	10/08/16
34	Phenols (as Total C)	Phenols	8	<0.1	Downstream Grab Sample	10/08/16
35	Lead	Metals	1.2	<0.3	Downstream Grab Sample	10/08/16
36	Arsenic	Metals	25	0.9	Downstream Grab Sample	10/08/16
37	Copper	Metals	5 or 30 ²	0.005	Downstream Grab Sample	10/08/16
38	Zinc	Metals	100	8.6	Downstream Grab Sample	10/08/16
39	Cadmium	Metals	0.08 or 0.09 or 0.15 or 0.25 ⁴	<0.1	Downstream Grab Sample	10/08/16
40	Mercury	Metals	MAC of 0.07	<0.02	Downstream Grab Sample	10/08/16
41	Chromium	Metals	3.4	<1	Downstream Grab Sample	10/08/16

⁶ Σ of Aldrin, Dieldrin, Endrin and Isodrin.

No.	Compound	Group of compounds	AA-EQS Inland SW ($\mu\text{g/l}$)	Measured /Estimated Conc. ($\mu\text{g/l}$) ¹	Data Source [Sample / PRTR / Other (state)]	Sample Date (if applicable)
42	Selenium	Metals	n/a	0.3	Downstream Grab Sample	10/08/16
43	Antimony	Metals	n/a	0.5	Downstream Grab Sample	10/08/16
44	Molybdenum	Metals	n/a	<1.0	Downstream Grab Sample	10/08/16
45	Tin	Metals	n/a	<1.0	Downstream Grab Sample	10/08/16
46	Barium	Metals	n/a	49.7	Downstream Grab Sample	10/08/16
47	Boron	Metals	n/a	0.04	Downstream Grab Sample	10/08/16
48	Cobalt	Metals	n/a	<1.0	Downstream Grab Sample	10/08/16
49	Vanadium	Metals	n/a	<1.0	Downstream Grab Sample	10/08/16
50	Nickel	Metals	4	2.1	Downstream Grab Sample	10/08/16
51	Fluoride	General	500	0.3	Downstream Grab Sample	10/08/16
52	Chloride	General	n/a	73	Downstream Grab Sample	10/08/16
53	TOC	General	n/a	11.27	Downstream Grab Sample	10/08/16
54	Cyanide	General	10	2.0	Downstream Grab Sample	10/08/16
	Conductivity	General	n/a	686	Downstream Grab Sample	10/08/16
	Alkalinity (mg/l CaCO ₃)	General	n/a	158	Downstream Grab Sample	10/08/16
	pH	General	n/a	8.4	Downstream Grab Sample	10/08/16