EPA Application Form

7.3.2 - Equivalent Level of Protection (Sewer) - Attachment

Organisation Name:	AbbVie Ireland NL B.V.
Application I.D.:	LA001712

Amendments to this Application Form Attachment

Version No.	Date	Amendment since previous version	Reason
V.1.0	July 2017	N/A	Online application form attachment

7.3.1 Equivalent Level of Protection (Emissions to Sewer)

Background information

In relation to emissions to sewer, Article 15 of the Industrial Emissions Directive (Directive 2010/75/EU) states:

With regard to indirect releases of polluting substances into water, the effect of a water treatment plant may be taken into account when determining the emission limit values of the installation concerned, provided that an equivalent level of protection of the environment as a whole is guaranteed and provided this does not lead to higher levels of pollution in the environment.

Furthermore, emission limit values (ELV's) applied by the Agency for an installation's emissions to sewer must satisfy the consent conditions (ELVs and other requirements) specified by Irish Water, as required by Section 99E of the EPA Act 1992 as amended.

(Note: To avoid unnecessary delays in the application assessment process, it is important that the applicant licensee liaises with Irish Water (or other water services authority responsible for the sewer network) at the earliest available opportunity, with a view to establishing consent conditions.)

Assessment of 'equivalent level of protection'

To comply with Article 15 above, the following must be demonstrated:

It must be demonstrated that the level of treatment of an installation's effluent, on and off site, is collectively equivalent to BAT and environmental quality standards will be observed in the receiving water (i.e., *'equivalent level of protection'*).

(1) Consider the parameters relevant to the installation's emissions to sewer (i.e., characteristics of discharge).

(2) Do sectoral BAT associated emission levels (BAT-AELs) exist for these parameters? These are the relevant sectoral BAT-AELs.

(3) Do the emission limits proposed for installation comply with all the relevant sectoral BAT-AELs? If Yes, ok; if not proceed to (4) below.

(4) If not, does the licence for the relevant Irish Water agglomeration discharge specify limits which comply with all/the remainder of the relevant sectoral BAT-AELs for the installation? If Yes, ok; if not proceed to (5) below.

(5) If no to (3) and (4) above, the applicant/licensee needs to otherwise determine whether the level of treatment in the sewer network is sufficient to treat the installation's discharges to comply with relevant sectoral BAT-AELs.

Assessment of 'levels of pollution in the environment'

To comply with Article 15 above, the following must be demonstrated:

In granting a licence for an installation, and in accordance with Section 83(5)(a)(iii) of the EPA Act 1992 as amended, as well as in accordance with Articles 5 and 7 of S.I. 272 of 2009, the Agency must ensure that the quality of any relevant receiving water is not impaired or that the relevant Environmental Quality standards are not exceeded. It must be demonstrated whether or not, upon discharge from the Irish Water WWTP, the

environmental quality standards[1] (EQSs) for the receiving water will be breached as a result of the installation's discharges. (i.e. '*does not lead to higher levels of pollution in the environment')*

Details on level of protection provided (on and off-site)

Please provide details in the table below on the installation emissions to the sewer; the processes which contribute to the emissions, the type of on-site treatment (if any), off-site treatment (if any) and the proposed maximum daily flows.

Table 1: On-site treatment – abatement at installation				
Emission Reference	Proposed / Existing	Process Description	Abatement	Proposed max. flow (m^3/day)
SE1	Proposed	Low strength process wastewater	pH and temperature adjustment	180
			Total:	180
Off-site treatment – Municipal Waste water treatment plant (MWWTP)				
Name of sewer network/agglomeration: **Sligo Wastewater Treatment Plant** **(a copy of the 2017 AER is attached)**				
Normal daily flow rate in network (m^3/day): **Hydraulic Capacity – Current loading is 18,740 m3/day (annual mean) and 51,236 m3/day (annual max) as reported in the 2017 AER for the facility (attached)**				
Responsible authority for network/agglomeration: **Irish Water**				
Type of treatment: **The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 50000. The treatment process includes:** **Preliminary Treatment (Screening, Grit Removal),** **Primary Treatment (Primary Settlement Tank),** **Secondary Treatment (Oxidation Tank),** **Nutrient Removal (Ferric Dosing), and** **Tertiary Treatment (UV Treatment).**				
Receiving water name (and waterbody type): **Sligo Bay (Coastal)**				
No. of dilutions available in the receiving water: Not provided				
Waste water discharge authorisation**: D0014-01**				
The maximum discharge volumes from the installation represent about **0.96** % of effluent discharge volumes from the Irish Water municipal wastewater treatment plant (MWWTP). The Agency's most recent national annual report/the most recent AER indicates that this MWWTP is: in compliance with the discharge limits for the following parameters: **BOD, COD, TSS, Ammonia N, pH, DO, temp, PCBs.**				

[1] EQSs as specified in Schedule 5 of *European Communities Environmental Objectives (Surface Waters) Regulations 2009* as amended.

not in compliance with the discharge limits for the following parameters: **Total P**

(note: all parameters were compliant in 2016 AER)

Assessment details

Please enter the required details in the assessment table below.

Edit the parameters in column 1 in accordance with the installation's characteristics of emissions to sewer.

Enter any limits specified by Irish Water (or other water service authority) in column 3.

In column 4 determine, if necessary for any parameter, the concentration of the installation's discharges after having received any treatment at the installation prior to discharge, and after having received any treatment in the sewer network/agglomeration prior to discharge.

Specify the relevant the BAT-AELs in Column 5.

Specify the relevant the EQSs in Column 6.

NOTE: Due to the receiving water body being a coastal zone the EQSs from SI No. 268 of 2006 (as amended) for Quality of Shellfish Waters have been applied as per the Sligo WWTP AER.

Table 2				
Parameter (sample parameters included below)	**Irish Water/ WSA**	**After on and off site treatment**	**BAT-AEL**	**EQS**
Temperature	25 Deg. C	35 Deg. C (onsite)	None	No greater than 2°C rise in ambient temperature
pH	7-9	6-9 (onsite)	None	None
	mg/l	**mg/l**	**mg/l**	**mg/l**
Biological Oxygen Demand	25	377 (onsite)	N/A	None
Chemical Oxygen Demand	125	599 (onsite)	**30-100 (or 12-250[2])**	None
Suspended Solids	35	333 (onsite)	**5-35**	None
Ammonia	10	N/A	**5-20 (inorganic N)**	None
Total Nitrogen	N/A	12 (onsite)	**5-25**	None
Total Phosphorous	2	68 (onsite)	**0.5-3**	None
Sulphates	N/A	15 (onsite)	N/A	None

[2] Based on emission level in the EU Reference Document on BAT for the Manufacture of Organic Fine Chemicals (2006)

Table 2				
Parameter (sample parameters included below)	**Irish Water/ WSA**	**After on and off site treatment**	**BAT-AEL**	**EQS**
Chlorides	N/A	6000 (onsite)	N/A	None
Detergents (as MBAS)	N/A	20 (onsite)	N/A	None
Oils, Fats, Grease	N/A	10 (onsite)	N/A	None

Table 3: Please include any other information you consider relevant in the (free text) box below:

It must be demonstrated that the level of treatment of an installation's effluent, on and off site, is collectively equivalent to BAT and environmental quality standards will be observed in the receiving water (i.e., *'equivalent level of protection'*).

(1) Consider the parameters relevant to the installation's emissions to sewer (i.e., characteristics of discharge):

Refer Table 2

(2) Do sectoral BAT associated emission levels (BAT-AELs) exist for these parameters? These are the relevant sectoral BAT-AELs.

BAT AELs from the Sectorial BAT document, namely the EU Decision BAT Conclusions on Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector, applies AELs for direct discharges from an installation's biological treatment plant to a surface water body. The EU Reference Document on BAT for the Manufacture of Organic Fine Chemicals (2006) may also apply.

As outlined in Table 2 there are 5 no. parameters with relevant BAT-AELs.

(3) Do the emission limits proposed for installation comply with all the relevant sectoral BAT-AELs?

The relevant sectorial BAT-AELs do not apply as the facility will not discharge wastewater directly into a waterbody. Process wastewater will be further treated in the Sligo Wastewater Treatment Plant (WWTP). The proposed ELVs for the facility have been discussed with Irish Water prior to this submission. It is therefore anticipated that the resulting treatment of the discharge will be in accordance with the ELVs in the discharge licence for the Sligo WWTP.

(4) If not, does the licence for the relevant Irish Water agglomeration discharge specify limits which comply with all/the remainder of the relevant sectoral BAT-AELs for the installation?

The ELVs in the Sligo WWTP discharge licence comply with the relevant BAT limits as indicated in table 2.

(5) If no to (3) and (4) above, the applicant/licensee needs to otherwise determine whether the level of treatment in the sewer network is sufficient to treat the installation's discharges to comply with relevant sectoral BAT-AELs.

The proposed facility will contribute 0.96% of the total influent to the Sligo WWTP. The proposed values have been discussed with Irish Water as have been agreed in principle with regards to the impact on the Sligo WWTP.

The main issue at the Sligo WWTP as identified in the 2017 AER for the facility (attached) is Total Phosphorus. The Total P concentration from the facility is anticipated is 68 mg/L which, once diluted (at a dilution factor of 0.0096), will contribute 0.65 mg /L to the total influent to the facility. It is anticipated that the Sligo WWTP plant will be able to assimilate this contribution, as discussed with Irish Water.

Table 3: Please include any other information you consider relevant in the (free text) box below:

In granting a licence for an installation, and in accordance with Section 83(5)(a)(iii) of the EPA Act 1992 as amended, as well as in accordance with Articles 5 and 7 of S.I. 272 of 2009, the Agency must ensure that the quality of any relevant receiving water is not impaired or that the relevant Environmental Quality standards are not exceeded. It must be demonstrated whether or not, upon discharge from the Irish Water WWTP, the environmental quality standards (EQSs) for the receiving water will be breached as a result of the installation's discharges. (i.e. *'does not lead to higher levels of pollution in the environment')*

The proposed facility will contribute 0.96% of the total influent to the facility. The proposed ELVs have been discussed and agreed in principle with Irish Water and are not anticipated to cause a breach in the licenced ELVs for the Sligo WWTP.

As stated in the 2015 and 2016 AERs for the facility, the discharge from the wastewater treatment plant does not have an observable negative impact on the water quality and the discharge from the WWTP does not have an observable negative impact on the Water Framework Directive status.

Annual Environmental Report 2017

Agglomeration Name:	**Sligo**
Licence Register No.	**D0014-01**

Contents

Section 1. Executive Summary and Introduction to the 2017 AER

1.1 Summary Report on 2017

This Annual Environmental Report has been prepared for **D0014-01, Sligo,** in County **Sligo**, 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

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 50000. The treatment process includes the following:-

- Preliminary Treatment (Screening, Grit Removal)
- Primary Treatment (Primary Settlement Tank)
- Secondary Treatment (Oxidation Tank)
- Nutrient Removal (Ferric Dosing)
- Tertiary Treatment (UV Treatment)

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

The following parameters exceeded the emission limit values in 2017:-

- Total P (mg/l)

3,060,820kgs total weight liquid sludge was removed from the wastewater treatment plant in 2017.
612,470kgs sludge as dried sludge was removed from the wastewater treatment plant in 2017.
Sludge was transferred to Sludge was transfered for use as a fertiliser/soil conditioner on agricultural land bank.

There were no major capital or operational changes undertaken in 2017, no changes are planned for the next 3 years.

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

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Table 2.1 Influent Monitoring Summary

2.1.1 Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m3/d)
Number of Samples	52	52	52	12	52	
Annual Max.	217	521	325	31.11	4.55	51236
Annual Mean	64.06	174.98	92.25	13.58	1.64	18740.10

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

Significance of results

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

The annual maximum hydraulic loading is greater than the peak 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)	Ammonia N (mg/l)	pH (Range)	Total Oxidised Nitrogen (mg/l)	DO % saturation	Temp (˚c)	PCBs
WWDL ELV (Schedule A) where applicable	25.00	125.00	35.00	2.00	10.00	7.0 - 9.0	15.00	>=70	25.00	0.00
ELV with Condition 2 Interpretation included	50.00	250.00	87.50	2.40	12.00	7.0 - 9.0	18.00	>=56	30.00	
% Reduction (Schedule A)										
Number of sample results	52	52	52	13	25	52		4	52	2
Number of sample results above WWDL ELV	0	0	0	12	0	0		0	0	0
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	12	0	0		0	0	0
Annual Mean (for parameters where a mean ELV applies)										
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Fail	Pass	Pass		Pass	Pass	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). The impact on receiving waters is assessed further in Section 2.3.

2.3 Ambient Monitoring Summary

Table 2.3. Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	E170003 N335887	No code Assigned				
Downstream Monitoring Point	E169485 N335974	No code Assigned	No	No	No	Yes
Downstream Monitoring Point #2	E169045 N336236	No code Assigned	No	No	No	Yes

Table 2.3.2 Ambient Impact Assessment Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD	0-Phosphate (as P)	Ammonia (as N)	Nitrogen		
Upstream Monitoring Point	Good						
Downstream Monitoring Point	Good						
Downstream Monitoring Point #2	Good						
Difference between Upstream and Downstream							
Difference between Upstream and Downstream #2							
EQS	Good						
% of Eqs	Good						
% of Eqs #2	Good						

The primary discharge from the WWTP is a coastal discharge. Due to the requirement to test additional parameters, Ambient Monitoring Results are attached separately.

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

A PRTR is not required as the PE is < 100000

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)
Influent mass loading (kg/year)	428,791	1,171,175	617,473	95,845	11,003
Effluent mass emission (kg/year)	32,661	206,228	46,683	32,828	3,573
% Efficiency (% reduction of influent load)	92%	82%	92%	66%	68%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	12,500
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	37,500
Hydraulic Capacity – Current loading (m3/day)	18,740
Hydraulic Capacity – Remaining (m3/day)	18,760
Organic Capacity - Design / As Constructed (PE)	50,000
Organic Capacity - Collected Load (PE)	28,158
Organic Capacity – Remaining (PE)	21,842
Will the capacity be exceeded in the next three years? (Yes / No)	No

3.3 Extent of Agglomeration Summary Report

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

Table 3.3 - Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration	**Estimated / Measured**
Load generated in the agglomeration that is collected in the sewer network	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

There were no complaints associated with the WWTP in 2017.

3.5 Reported Incidents Summary

There were no incidents associated with the WWTP in 2017.

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	Quantity	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	10,806 tonnes	314	0.16%	No	Yes	No	
Waterworks Sludge							
Industrial / Commercial Sludge							
Landfill Leachate (delivered by tanker)							
Landfill Leachate (delivered by sewer network)							
Other (specify)							

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

A summary of the Storm Water Overflow significance and operation is included below. The Stormwater Overflow Assessment was submitted previously in AER 2012.

Table 4.1.1 - SWO Identification and Inspection Summary Report

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High/Med/ Low)	Compliance with DoEHLG criteria	No. of times activated in 2017 (No of events)	Total volume discharged in 2017 (m3)	Total volume discharged in 2017 (P.E.)	Estimated / Measured data
(P)SW1	168437, 336785	Yes						
SW2	168467, 336877	Yes						
SW3	168981, 336273	Yes	Medium	Compliant	8	Unknown	Unknown	Estimated
SW4	169678, 335970	Yes	Medium	Compliant	7	Unknown	Unknown	Estimated
SW5	169351, 335978	Yes	Low	Compliant	5	Unknown	Unknown	Estimated
SWA	167889, 337373	Yes	High	Compliant	73	333942	4066	Measured
SWB	168437, 336785	Yes	High	Compliant	130	247855	3018	Measured

Table 4.1.2 - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m3/yr)?	Unknown

How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2013?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	N/A
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	Yes
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1 ?	Yes

4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.
There are no specified improvements for the WWTP.

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
SWO's	Installation of a petrol interceptor on John F Kennedy Parade to prevent the ingress of contaminants into the Garavogue River.	SWO assessment	100%	31/12/2017	SWO
SWO's	1.5km of sewer upgrade work works in Sligo City	SWO assessment	100%	31/12/2017	upgrade of Foul sewer network in Pearse road and o' Connell Street
Flows not being recorded on SWO's	Install Flow measurement/SCADA to record flows and events	SWO assessment (condition 4 & 5.2)	70%	Unknown	SWO is not complete. Irish Water intends to undertake this work and submit at a later date
SW infiltration	CCTV survey of network on north side of Garavouge river estuary to identify and implement remedial measures	WWTP assessment(condition 5.2)	70%	01/06/2018	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a priortised basis.

Integrity of wastewater works	Sewer Integrity Risk Assessment	Sewer Integrity Tool (Condition 5.2)	50%	Unknown	Sewer Integrity Risk assessment is not complete.
		Shellfish Impact Risk Assessment (Condition 5)	100%	complete	Shellfish waters Desk study uploaded by IW to the EPA in late 2015

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	Medium	51	Appendix 7.3		
Environmental Risk Assessment Score	Low	160	Appendix 7.3		
Structural Risk Assessment Score	Medium	69	Appendix 7.3		
Operation & Maintenance Risk Assessment Score	Low	58	Appendix 7.3		
Overall Risk Score for the agglomeration	Low	338	Appendix 7.3		

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required by Condition 5 in Licence	Required in this AER or outstanding from previous AER?	Included in this AER?	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Required	No	No	AER 2014
Drinking Water Abstraction Point Risk Assessment	Not Required	No	No	
Shellfish Impact Assessment	Required	No	No	AER 2015
Pearl Mussel Report	Not Required	No	No	
Toxicity/Leachate Management	Not Required	No	No	
Toxicity of Final Effluent Report	Required	No	No	AER 2012
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	No	No recommendations
Drinking Water Abstraction Point Risk Assessment	N/A	
Shellfish Impact Assessment	No	There were no recommendations
Pearl Mussel Report	N/A	
Toxicity/Leachate Management	N/A	
Toxicity of Final Effluent Report	Yes	No recommendations
Habitats Impact Assessment	N/A	

5.1 Priority Substances Assessment

The Priority Substance Assessment Report was submitted previously in AER 2014. A summary of the significance and operation is included below.

Table 5.1 - Priority Substance Assessment Summary Report

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

5.3 Shellfish Impact Assessment Report

The Shellfish Impact Assessment Report was submitted previously in AER 2015. A summary of the significance and operation is included below.

Table 5.3 - Shellfish Impact Assessment Summary

Is a Shellfish Impact assessment required in the 2017 AER (or outstanding from a previous AER)?	No
List prescribed organisations consulted when preparing the assessment.	BIM, SFPA, MI
Does the assessment consider the impact of all discharges from the works?	Yes
Does the assessment identify that any of the discharges from the works are impacting on the microbiological quality of the shellfish?	Further detailed assessment of impacts proposed to confirm any impacts
Does the assessment recommend that there is a requirement to install UV/other disinfection equipment on any of the discharges?	To be confirmed in detailed assessment
Provide details on disinfection system to be employed	n/a
Has this been completed?	n/a
If not yet complete what is the expected date for completion?	n/a
Where disinfection is required, is there a programme in place to demonstrate the efficiency of any disinfection system in place?	n/a
What is the demonstrated efficiency of the disinfection system?	n/a
Is there a shellfish monitoring programme in place?	Yes
Does the shellfish or shellfish water monitoring programme include results generated by other organisations?	Yes
List of organisations contributing data to the assessment	BIM, SFPA, MI
Does the Improvement Programme for the agglomeration include the findings and recommendations of the shellfish impact risk assessment?	n/a
Recommendations	There were no recommendations
Status of any improvement measures required.	n/a

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

5.6 Toxicity of the Final Effluent Report

The Final Effluent Toxicity Assessment Report was submitted previously in AER 2012. A summary of the significance and operation is included below.

Table 5.6 - Toxicity of the Final Effluent Report Summary

Is a Toxicity report required? (Condition 4)	No
Has the study been carried out against 4 species in 3 trophic levels?	No
Does the report identify that the discharge is toxic to any of the species in the study?	No
List species impacted	N/A
Recommendations	No recommendations
Does the Improvement Programme for the agglomeration include any procedural and/or infrastructural works to reduce the toxicity of the final discharge?	No
Status of any improvement measures required	N/A

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?	Yes
List reason e.g. additional SWO identified	Unregistered SWO at GPS Cords 168513, 336844 (approx 60 m upstream of Siphon inlet chamber on Cartron foreshore). P(SW1) and SW2 have been decommissioned.
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.)	Yes
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	Ambient water quality monitoring locations need to be agreed upon and registered formally
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	No
Ensure the following reports are included	N/A

Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2017 AER.
- Monitoring Reports Summary.
- Operational Reports Summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports
- Certification and Sign Off
- Appendices

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

Signed: Date: 27/02/2018

Michael O'Leary
Acting Head of Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures / Improvement Programme

There were no major capital or operational changes undertaken in 2017, no changes are planned for the next 3 years.

Appendix 7.2 Ambient Monitoring

Upstream

Date	Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	Total N (mg/l)	D.O. (% Sat)	D.O. (mg/l)	pH (mg/l)	
Mean								
95%ile								

Downstream

Date	Ammonia (mg/l)	Ortho P (mg/l)	BOD (mg/l)	Total N (mg/l)	D.O. (% Sat)	D.O. (mg/l)	pH (mg/l)	
Mean								
95%ile								

Location	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8
				Sligo JN1352				
Station	Blue Lagoon (@ slipway)	JFK Parade	Key Street Car Park (@ slipway)	Hughes Bridge	Deepwater Quay (imediately beyond quay)	1 Mile Downstream of Proposed Outlet	Cummeen Strand (Take first, drys out within 2 hours)	Rosses Point (@ slipway)
Easting	170003	169485	169045	168900	168053	166538	166553	163026
Northing	335887	335974	336236	336370	337162	339198	336802	339692
Sampling date	29/03/2017	29/03/2017	29/03/2017	29/03/2017	29/03/2017	29/03/2017	29/03/2017	29/03/2017
Time	14:18:37	14:11:03	14:37:33	14:45:52	15:03:10	13:45:12	15:18:14	13:22:23
Sampling order	4	3	5	6	7	2	8	1
Visual Condition	clear brown	clear brown	clear brown	clear brown	turbid brown	clear	clear	clear
Temperature/ºC	10.26	10.15	10.29	10.62	11.23	12.9	12.97	10.43
Disolved Oxygen/mg/l	10.87	10.89	10.65	10.86	10.96	9.72	10.19	8.71
Disolved Oxygen/%	102.4	102.3	100.4	103.5	106.3	104.1	107.2	99.3
Salinity/ppt	0.1	0.1	0.13	0.61	1.1	10.9	7.85	29.29
Conductivity	217.7	211	267	1162	2049	18470	13620	45170
pH	8.35	8.54	8.45	8.48	8.38	8.18	8.1	8.19
Turbidity	1.3	1.8	2.3	18.2	8.1	6.3	3.7	11.8
E coli (Filtration) cfu/100ml	10	5	1553	2359	738	187	47	2
Total Coliforms (Filtration) cfu/100ml	38	276	3873	3076	17329	2755	866	261
Enterococci cfu/100ml	0	2	70	280	90	40	23	4

Location	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8
				Sligo JN1406				
Station	Blue Lagoon (@ slipway)	JFK Parade	Key Street Car Park (@ slipway)	Hughes Bridge	Deepwater Quay (imediately beyond quay)	1 Mile Downstream of Proposed Outlet	Cummeen Strand (Take first, drys out within 2 hours)	Rosses Point (@ slipway)
Easting	170003	169485	169045	168900	168053	166538	166553	163026
Northing	335887	335974	336236	336370	337162	339198	336802	339692
Sampling date	13/06/2017	13/06/2017	13/06/2017	13/06/2017	13/06/2017	13/06/2017	13/06/2017	13/06/2017
Time	11:23:04	11:15:28	11:05:59	10:59:01	11:32:05	11:42:16	10:16:47	11:54:45
Sampling order	6	5	4	3	2	7	1	8
Visual Condition	clear	clear	clear	clear	cloudy	cloudy	clear	clear
Temperature/ºC	15.15	15.08	15.18	15.06	15.04	14.18	14.32	14.61
Disolved Oxygen/mg/l	8.89	9.34	10.35	8.99	8.53	12.13	8.71	8.18
Disolved Oxygen/%	93.6	98.1	111.2	97	96.1	136.7	105.9	103
Salinity/ppt	0	0	3.42	4.63	11.64	14.66	26.52	31.21
Conductivity	0.2255	0.2179	6.177	8.263	19.61	24.22	41.34	47.8
pH	7.84	8.14	8.07	7.92	7.98	8.12	7.88	8
Turbidity	0	1.4	0.9	16.8	2.4	49.1	18	2
E coli (Filtration) cfu/100ml	7	22	7270	93	156	199	4	0
Total Coliforms (Filtration) cfu/100ml	687	1046	24200	1733	1259	1553	365	40
Enterococci cfu/100ml	18	18	280	14	20	53	8	1
BOD	<1	<1	<1	<1	<1	<1	<1	<1
ammonia as N	0.021	0.023	0.04	0.034	0.081	0.01	0.022	0.018
total nitrogen as N	0.72	0.602	0.654	0.566	0.682	0.5	0.5	0.5
TON	0.13	0.1	0.1	0.1	0.153	0.205	0.03	0.13
dissolved inorganic nitrogen as N	0.151	0.123	0.14	0.134	0.234	0.215	0.052	0.148
orthophosphate as P	0.013	0.014	0.014	0.019	0.012	0.015	0.004	0.008
chlorophyll mg/l	3.69	3.85	6.23	4.07	5.48	7.85	5.28	3.66

Location	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8
				Sligo JN1352				
Station	Blue Lagoon (@ slipway)	JFK Parade	Key Street Car Park (@ slipway)	Hughes Bridge	Deepwater Quay (imediately beyond quay)	1 Mile Downstream of Proposed Outlet	Cummeen Strand (Take first, drys out within 2 hours)	Rosses Point (@ slipway)
Easting	170003	169485	169045	168900	168053	166538	166553	163026
Northing	335887	335974	336236	336370	337162	339198	336802	339692
Sampling date	13/09/2017	13/09/2017	13/09/2017	13/09/2017	13/09/2017	13/09/2017	13/09/2017	13/09/2017
Time	13:03:37	12:57:27	12:49:38	12:43:49	11:50:14	12:11:20	11:41:07	12:19:45
Sampling order	8	7	6	5	2	3	1	4
Visual Condition	clear brown	clear brown	clear brown	clear brown	turbid brown	cloudy	cloudy	cloudy
Temperature/ºC	14.73	14.67	14.71	14.75	14.56	11.89	12.05	13.62
Disolved Oxygen/mg/l	8.48	9.11	8.75	8.71	12.19	10.12	11.71	8.53
Disolved Oxygen/%	88.6	94.9	91.4	90.9	127.3	100.1	124.7	103.5
Salinity/ppt	0	0	0	0	1.12	1.71	13.31	28.52
Conductivity	214.6	212.6	895.5	446.3	2098	3167	21600	44110
pH	8.14	8.3	8.16	8.4	8.78	7.91	8.02	7.99
Turbidity	22.5	23.4	24.3	27.1	22.2	35.1	34.4	27.9
E coli (Filtration) cfu/100ml	52	41	960	134	1722	6893	598	41
Enterococci cfu/100ml	14	21	54	10	230	380	45	10

Location	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8
				Sligo JN1406				
Station	Blue Lagoon (@ slipway)	JFK Parade	Key Street Car Park (@ slipway)	Hughes Bridge	Deepwater Quay (imediately beyond quay)	1 Mile Downstream of Proposed Outlet	Cummeen Strand (Take first, drys out within 2 hours)	Rosses Point (@ slipway)
Easting	170003	169485	169045	168900	168053	166538	166553	163026
Northing	335887	335974	336236	336370	337162	339198	336802	339692
Sampling date	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017
Time	12:28	12:22	12:15	12:09	11:15	11:38	11:03	11:51
Sampling order	8	7	6	5	2	3	1	4
Visual Condition	clear brown	clear brown	clear brown	clear brown	cloudy brown	cloudy	cloudy	cloudy
Temperature/ºC	8.23	8.18		8.19	8.44	8.78	8.82	8.7
Disolved Oxygen/mg/l	10.02	10.35		10.61	10.05	9.37	9.03	9.25
Disolved Oxygen/%	89.9	92.8		95.7	97.1	98.5	96.6	98.6
Salinity/PSU	0	0		1.06	10.72	22.42	24.97	25.36
Conductivity	0.2193	0.2072		1.982	18.18	35.56	39.16	39.45
pH	8.13	8.47		8.32	8.09	8.01	7.92	8.04
Turbidity	2.7	2.7		10.5	7.7	230.7	18	37.2
E coli (Filtration) cfu/100ml	35	35		980	75	43	21	164
Total Coliforms (Filtration) cfu/100ml	236	144		1414	517	387	143	980
Enterococci cfu/100ml	6	6		25	22	47	9	30
BOD	<1	<1		<1	<1	<1	<1	<1
ammonia as N	0.007	0.02		0.007	0.026	0.026	0.042	0.033
total nitrogen as N	0.592	0.569		0.581	0.5	0.5	0.5	0.5
TON	0.262	0.22		0.1	0.227	0.205	0.255	0.156
dissolved inorganic nitrogen as N	0.269	0.237		0.107	0.253	0.231	0.297	0.189
orthophosphate as P	<0.01	<0.01		<0.01	0.012	0.01	0.012	0.013
chlorophyll mg/l	4.56	4.66		4.92	4.43	6.55	3.08	4.78

Appendix 7.3 Sewer Integrity Risk Assessment

	Section 1.1 Agglomeration Details					
	Name	**Sligo**				
	Licence Number	**D0014-01**				
	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)	**Sligo**				
	Date Licence Issued	**03/03/2010**				
	Current Date	**11/01/2018**				
			Year	Year	Year	Year
	Waste Water Works - Wastewater Treatment Plant Details	**Unit**	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	22019416	18772000		
1.3	Average Daily Influent BOD or Average BOD Load from area served (If no measured data exists, insert estimated figure)	mg/l, measured	59	83		
1.4	Total BOD Load	kg/day	1299.145544	1558.076	0	0
1.5	Average Population Equivalent (@0.06kg/person/day)	p.e.	21652	25968	0	0
1.6	Estimated (existing) Non-Domestic Load	p.e.	0			
1.7	Estimated Domestic Load	p.e.	21652	25968	0	0
1.8	Occupancy Rate for the Agglomeration	pop/house	2.346	2.346		
1.9	Estimated Number of Connected Properties	houses	9230	11069	0	0
1.10	Number of properties within the agglomeration when compared with CSO Data or An Post Geodirectory	houses	8289	8289		
	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	144.6759259			
1.12	Estimated 3DWF	l/sec	434.03	0.00	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	676.1111111			
1.14	This Annual Average Peak as Multiples of Dry Weather Flow (Peaking Factor)	Nr	4.67	0.00	0.00	0.00
1.15	Highest Peak Flow Recorded (Insert UNKNOWN if no records exist)	l/s	UNKNOWN			
1.16	Does this Peak Flow (multiple of DWF) cause hydraulic capacity problems within the network ?	---	No	Yes	Yes	Yes
1.17	Total Rainfall for Previous Year	mm	1552.8	1202.4	1239.9	
1.18	Comparison - Mean Annual Rainfall for the agglomeration	mm	1260.1	1260.1	1260.1	
1.18.1	Define the Weather Station Used		Markree	Markree	Markree	
1.19	If Storm Water Storage is available at the Wastewater Treatment plant, what is the volume of the storm tank ?	m^3	1000	1000	1000	
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^3 per month	1200	900		
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	> 5 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		SUS25	SUS 2001	SUS 2002	SUS 2003
1.23.1	If other or combination of the above please describe	Describe	and hard copies	and hard copies	and hard copies	
1.24	Total length of sewers (use drop down menus to define whether these figures are estimated or measured)	km Estimated	24.48	24.49	24.49	0.00
1.24.1	Total length of sewers > 450mm Diameter	km Estimated	9.99	9.99	9.99	
1.24.2	Total length of sewers > 300mm but ≤ 450mm in Diameter	km Estimated	6.82	6.82	6.82	
1.24.3	Total length of sewers > 225mm but ≤ 300mm in Diameter	km Measured	3.58	3.58	3.58	
1.24.4	Total length of sewers ≤ 225mm in Diameter	km Estimated	4.10	4.10	4.10	
1.24.5	Other	km Estimated	Unknown	Unknown	Unknown	
1.25	Pipeline Material					
1.25.1	What portion of the sewer network consists of Concrete Pipes	% Estimated	10%	10%	10%	
1.25.2	What portion of the sewer network consists of Plastic Pipes	% Estimated	20%	20%	20%	
1.25.3	What portion of the sewer network consists of Clay materials	% Estimated	30%	30%	30%	
1.25.4	What portion of the sewer network consists of Brick Type Sewers	% Estimated	5%	5%	3%	
1.25.5	What portion of the sewer network consists of Other Materials	% Estimated	35%	35%	37%	
1.26	Total number of Storm Water Overflows	Nr	5	5	5	

1.27	What Screening or other mechanical devices are employed at the storm water overflows					
	SWO No. 1 located at Quay Street	Describe				
	SWO No. 2 located at Riverside	Describe				
	SWO No. 3 located at Kempton Promenade	Describe				
	SWO No. 4 located at Sligo Wastewater treatment plant	Describe	h and dilution with treated effluent			
	SWO No. 5 located at Deepwater Berths Road.	Describe	through a 6mm wedgewire			
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)					
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. 1 located at Quay Street	Describe	Moderate	Moderate	Moderate	
	SWO No. 2 located at Riverside	Describe	Moderate	Moderate	Moderate	
	SWO No. 3 located at Kempton Promenade	Describe	Moderate	Moderate	Moderate	
	SWO No. 4 located at Sligo Wastewater treatment plant	Describe	Moderate	Moderate	Moderate	
	SWO No. 5 located at Deepwater Berths Road.	Describe	Moderate	Moderate	Moderate	
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. 1 located at Quay Street	Describe	Not Listed	Not Listed	Not Listed	
	SWO No. 2 located at Riverside	Describe	Not Listed	Not Listed	Not Listed	
	SWO No. 3 located at Kempton Promenade	Describe	Not Listed	Not Listed	Not Listed	
	SWO No. 4 located at Sligo Wastewater treatment plant	Describe	Not Listed	Not Listed	Not Listed	
	SWO No. 5 located at Deepwater Berths Road.	Describe	Not Listed	Not Listed	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. 1 located at Quay Street	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 2 located at Riverside	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 3 located at Kempton Promenade	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 4 located at Sligo Wastewater treatment plant	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 5 located at Deepwater Berths Road.	Designation	Sensitive	Sensitive	Sensitive	
1.28.5	With reference to the SWO's detailed above define do the receiving waters have any other designations.					
	SWO No. 1 located at Quay Street	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 2 located at Riverside	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 3 located at Kempton Promenade	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 4 located at Sligo Wastewater treatment plant	Designation	Sensitive	Sensitive	Sensitive	
	SWO No. 5 located at Deepwater Berths Road.	Designation	Sensitive	Sensitive	Sensitive	
	Section 1.5 Waste Water Works - Pumping Stations					
1.29	Number of Pumping Stations (operated by the Local Authority)	Nr				

1.30	Total Length of Rising Mains (operated by the Local Authority)	km				
1.31	Rising Main Material					
1.31.1	What portion of the rising mains consists of ductile iron pipes	% Measured				
1.31.2	What portion of the rising mains consists of plastic pipes	% Measured	N/A	N/A	N/A	
1.31.3	What portion of the rising mains consists of other materials	% Estimated	N/A	N/A	N/A	
1.32	Discharge Capacity of the Pump Set (s) at normal duty point					
	At Pump Station __ at _____					
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%	0.00%	
1.34	Available Storage Capacity at Pump Stations (include pump sump and any storm water/emergency overflow tanks)					
	At Pump Station __ at _____	m^3	0	0	0	
1.35	Total Number of ***"Licenced Secondary Discharge Points and Stormwater Overflows"*** at pumping stations	Nr	1	1	1	
1.36	Total Number of ***"Emergency Overflow Points"*** at pumping stations	Nr	1	1	1	
1.37	What Screening or other mechanical devices are employed at the secondary discharge points or emergency overflows ?					
	At Pump Station __ at _____	Describe	e.g. 6mm Screen, Manual Coarse Screen, Vortex Overflow, M			
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 _____	Describe	Select Q			
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 _____		Sensitivity?			
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 _____	Designation				
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 _____	Designation				

1.39	Estimated Number of Private Pumping Stations within the agglomeration (not operated by the Local Authority)	Nr	1	1	1	
	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	2			
1.41	Number of Reported Complaints which have been rectified	Nr	2			
	Section 1.6.2 Reported/Recorded/Estimated Number of Secondary Discharges					
1.42	Number of Reported Secondary Discharges	Nr				
1.43	Number of Recorded Secondary Discharges	Nr				
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				
1.46	Number of Recorded Emergency Overflow Discharges	Nr				
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 *(The individual personnel shall not be named, only grade and level of training needs to be provided)*					
1.48.1	1 Full Time Caretaker					
1.48.2						
1.48.3						
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				
1.50	Sewers Rehabilitated	m				
1.51	Manholes Rehabilitated	Nr				
1.52	Local Repairs	Nr				
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	0	
1.55	WWTW operated by Local Authority Upgraded or Replaced	Nr	0	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						
	Section 1.9 Licence Specified Improvements Works					
1.57	*The Local Authority is required to report on the extent of Improvement Works which have been specifed under the Licence as issued by the EPA. Reference which AER contains this information*					
	Section 1.10 Other Updates Since Last Report					
1.58	*For example : 50% of the sewer network is currently being upgraded under the WSIP with an investment of €1.5m in 2010.*					
1.59	*For example : 2% of the sewer network is currently being replaced under the Local Authorities Annual Maintenance Fund*					
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) ?	Yes	0		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 ?	20%	20	vn - Scheme realised	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 ?	less than 5	1		Select N/A response if no design assessment or design exists.
2.1.3	Are the outcomes of the Hydraulic Assessment being implemented ?	Yes	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 ?	5 to 10	3		Select N/A response if no hydraulic performance assessment or design exists. For onging works select "less than 5".
2.2	Has a Dynamic Computer Model been used to Assess the Hydraulic Performance of the Sewer Network ?	Yes	0		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" ?	Yes	0		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?	5 to 10	7		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" ?	Yes	0		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	Yes	0		Select N/A if no Flow Survey has been undertaken.
2.5.2	To Verify a Computer or Mathematical Model of the Network	Yes	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	Unknown	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?	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	Are there deficiencies in performance criteria within the sewer network ?	N/A	0		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 ?	N/A	0		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	N/A	0		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 ?	Yes	0		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)		**51**		
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	What Environmental or Discharge Quality Data is available with regard to the sewer network ?	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	Do trade effluents discharge to the sewer network?	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	Are there Storm Water Overflows within the network ?	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	Are there Secondary Discharges within the network (excluding Emergency Overflows at Pump Stations)?	Yes	20		If the answer is **No**, proceed to Query 3.1.4.
3.1.4	Is there any evidence that exfiltration is occurring from the network ?	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	If Answer to Query 3.1.1 is "Yes", what % of trade effluents have a licence to Discharge to the Public Sewer ?	>90%	0		Select N/A if answer to Query 3.1.1 is **No**. If not all trade effleunts are licenced, Local Authority should consider issuing and controlling such discharges under the appropriate Legislation.
3.2.1	Are all licenced trade Discharges compliant with their relevant licence and associated conditions	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	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)	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	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?	100%	0		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	Have samples from any Secondary Discharges within the system been analysed ?	No	20		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	What percentage of discharges from the system are known to cause environmental pollution of the receiving waters ?	None	0		If the answer is greater than 50% then detail, in the AER, the Improvement Programme necessary to reduce this percentage.
3.6	In relation to possible exfiltration has a risk analysis of ground water contamination or pollution been undertaken ?	No	20		Select N/A if answer to Query 3.1.4 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	If Answer to Query 3.6 is "Yes", have any groundwater aquifers been identified in the area of the Network and/or Discharge Points?	N/A	0		Select **N/A** if no risk analysis of groundwater contamination has been undertaken.
3.6.2	If Answer to Query 3.6.1 is "Yes", state the classification of groundwater aquifer identified in the area?	N/A	0		Select **N/A** if no risk analysis of groundwater contamination has been undertaken.
3.6.3	In relation to Query 3.6.1, is the aquifer used as a source for Public, Private or Group Water Supply Schemes?	N/A	0		Select **N/A** if no risk analysis of groundwater contamination has been undertaken.
3.7	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?	Yes	0		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	What percentage of storm water overflows comply with the performance criteria referred to in Query 3.7?	> 80%	10		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	Have the causes of these Capacity Deficiencies (storm water overflows & Secondary Discharges) been identified ?	Yes	0		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 or assimilative model
		Total Risk Assessment Score (RAS)	**160**		
3.10	Prepare Assessment of Needs & Sewer Upgrade Implementation Plan	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	Has a CCTV Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Sewer Condition Inspections" and "Manual of Sewer Condition Classification" ?	Yes	0		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?	less than 5	0		If no CCTV has been undertaken, select "N/A" response
4.2	What was this CCTV Survey Information Used for?	Minimal Survey to Determine extent of Problem Sewers	5		Select N/A if answer to Query 4.1 is NO.
4.3	Has the CCTV Survey been used to Assess the Structural Condition of the Sewer Network or targeted sections of the Sewer Network?	Yes	0		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	Have Performance Criteria been developed to determine the short, medium or long term structural condition of the sewer network ?	Yes	0		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)	6%	19		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 5 collapse, include the total length of that sewer in calcuating 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)	17%	23		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 4 condition, include the total length of that sewer in calcuating 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)	13%	4		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 3 deterioration, include the total length of that sewer in calcuating 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)	2%	1		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 2 feature, include the total length of that sewer in calcuating 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)	64%	3		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%		**102%**	**54**		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 autmitically set at the maximum of 140.
4.5	What % of the deficiencies, as detailed in Items 4.4.1, 4.4.2 and 4.4.3, have been rectified ?	51 - 75%	10		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	Have the causes of the Structural Deficiencies (Grades 3, 4 and 5) been identified or is there a Preventative Maintenance Programme in place?	Yes	0		If the answer is **No**, consider further examination of the sewer network, the structural loading conditions, gradients and possible H_2S Formation. If Yes completed Query 4.7
		Total Risk Assessment Score (RAS)	**69**		

4.7	Prepare Assessment of Needs & Sewer Rehabilitation Implementation Plan	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents

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	51	Medium Risk	34%	150
Section 3.1 Environmental Risk Assessment	160	Low Risk	32%	500
Section 4.1 Structural Risk Assessment	69.27816667	Medium Risk	46%	150
Section 5.1 O&M Risk Assessment	58	Low Risk	29%	200
Total RAS for Network	338.2781667	Low Risk	34%	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"