Annual Environmental Report 2014

Agglomeration Name:	**Inniskeen**
Licence Register No.	**D0348**

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Section 1. Executive Summary and Introduction to the 2014 AER

1.1 Summary report on 2014

This Annual Environmental Report has been prepared for D0348-01, Inniskeen, in County Monaghan in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified assessments are included as an appendix to the AER as follows:

- Drinking water risk assessment

The agglomeration is served by a wastewater treatment plant with a Design PE of 1750. The treatment process includes the following:-

- preliminary treatment
- secondary treatment
- chemical dosing for phosphorus removal
- tertiary treatment – sand filter

The final effluent from the Primary Discharge Point was non-compliant with the Emission Limit Value for Ammonia in 2014.

The following parameters exceeded the emission limit values in 2014:-

- Ortho-phosphate
- Ammonia

8640 kgs sludge (total weight sludge) were removed from the wastewater treatment plant in 2014 as dewatered sludge cake. Sludge was transferred to Castleblayney WWTP.

There were no major capital or operational changes undertaken in 2014.

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

	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	13	13	13	13	13		
Annual Max.	1191	2040	304	24.1	101.70	1181	794
Annual Mean	218.92	403.33	69.58	5.27	36.02	274	353

Significance of results
The annual mean hydraulic 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 Summary

	cBOD (mg/l)	COD (mg/l)	SS (mg/l)	Ammonia (mg/l)	Total P (mg/l)	Ortho P (mg/l)	Total N (mg/l)	Comment
WWDL ELV (Schedule A)	10	125	10	2	2	1.5	N/A	
ELV with Condition 2 Interpretation included	No result >100% ELV = 20mg/l	No result >100% ELV = 250mg/l	No result >150% ELV = 25mg/l	8 out of 10 consecutive samples shall not exceed ELV, no result shall exceed ELV by >20% = 2.4mg/l	8 out of 10 consecutive samples shall not exceed ELV, no result shall exceed ELV by >20% = 2.4mg/l	8 out of 10 consecutive samples shall not exceed ELV, no result shall exceed ELV by >20% = 1.8mg/l	N/A	13 samples taken, therefore 2 'allowable' failures
Number of sample results	13	13	13	13	13	13	N/A	
Number of sample results above WWDL ELV	0	0	0	1	0	1	N/A	
Number of sample results above ELV with Condition 2 Interpretation included	0	0	0	1	0	0	N/A	

Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	0.67	0.47	1.66	N/A	
Overall Compliance (Pass/Fail)	PASS	PASS	PASS	FAIL	PASS	PASS	N/A	

Significance of results

The WWTP was non-compliant with the ELV for Ammonia set in the wastewater discharge licence. There was 1 sample non-compliant with the ELVs in relation to ammonia. The non-compliance is due to a failure in the air blower system. The impact on receiving waters is assessed further in Section 2.3.

2.3 Ambient monitoring summary

Table 2.3 - Ambient Monitoring Report Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	***Irish Grid Reference***	**EPA Feature Coding Tool code**	**Current EQS Status**	**Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?**
Upstream monitoring point	E293923 N306701	RS06F010667	Poor	n/a
Downstream monitoring point	N293999 E306647	RS06F010670	Poor	No

The results for the upstream and downstream monitoring are included as in Appendix 7.2.

Significance of results

The WWTP was non-compliant with the ELV for Ammonia set in the wastewater discharge licence as detailed in Section 2.2.

The discharge from the wastewater treatment plant doesn't have an observable impact on the water quality status.

2.4 Data collection and reporting requirements under the Urban Waste Water Treatment Directive

The electronic submission of data was completed on a monthly basis to EPA through MDS (EDEN) in XML format.

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

A PRTR is not required as the agglomeration is less than 2000 p.e.

Section 3 Operational Reports Summary

3.1 Treatment Efficiency Report

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:-

Table 3.1 - Treatment Efficiency Report Summary

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)	Comment
Influent mass loading (kg/year)	7730	14279	3074	193	1667	
Effluent mass emission (kg/year)	265	2877	639	29	1586	
% Efficiency (% reduction of influent load)	97	80	79	85	5%	

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/year)	18250
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/year)	149650
Hydraulic Capacity – Current loading (m3/year)	100061
Hydraulic Capacity – Remaining (m3/year)	49589
Organic Capacity - Design / As Constructed (PE)	1800
Organic Capacity - Current loading (PE)	353
Organic Capacity – Remaining (PE)	1447
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 treated 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
Load generated in the agglomeration that is collected in the sewer network	100%
Load collected in the agglomeration that enters treatment plant	100%
Load collected in the sewer network but discharged without treatment	0%

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**.**

The data in Table 3.3 above is based on influent monitoring as detailed in Section 2.1 above.

3.4 Complaints Summary

There were no complaints of an environmental nature related to the discharge to waters from the Inniskeen WWTP in 2014.

3.5 Reported Incidents Summary

A summary of reported incidents is included below.

Table 3.5.1 - Summary of Incidents

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of incidents	Corrective Action	Authorities Contacted Note 1	Reported to EPA (Yes/No)	Closed (Y/N)
ELV exceedance	Ammonia	Air blower failure	1	Equipment repaired	No	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 2014	1
Number of Incidents reported to the EPA via EDEN in 2014	1
Explanation of any discrepancies between the two numbers above	N/A

Irish Water are in continuous communication with Local Authorities reiterating the requirement to report incidents to the EPA as per Waste Water Discharge Licence Requirements. Discussions in relation to this matter are also progressing at senior management level between Irish Water and the Local Authorities. In addition to this Incident Management training will also be provided to Local Authorities in 2015 to address concerns associated with incident classification, reporting requirements and incident notification.

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**	**PE/year**	**% of load to WWTP**	**Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)**	**Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)**
Domestic /Septic Tank Sludge	0	0	0	N	N
Industrial / Commercial Sludge	0	0	0	N	N
Landfill Leachate (delivered by tanker)	0	0	0	N	N
Landfill Leachate (delivered by sewer network)	0	0	0	N	N
Other (specify)	0	0	0	N	N

Notes:

1. Other Inputs include; septic tank sludge, industrial /commercial sludge, landfill leachate and any other sludge that is collected and added to the treatment plant.
2. Sludge that is added to a dedicated sludge reception facility at a waste water treatment plant not included in Table 3.6. Only include sludge which is added to the waste water treatment process stream. Enter zero where there are no inputs

Section 4. Infrastructural Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report was submitted as part of the second AER for Inniskeen in January 2012. 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 / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2014 (No. of events)	Total volume discharged in 2014 (m3)	Total volume discharged in 2014 (P.E.)	Estimated /Measured data
SW-2	293928E 306704N	Yes	Low	Compliant	0	N/A	N/A	E

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)?	N/A
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	N/A
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2014?	N/A
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 Schedule A3 & C3	Provided with 2nd AER
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

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

The Improvement Programme report was submitted with the second 2011 AER for Inniskeen.

The Improvement Programme report 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 (under Schedule A and C of WWDL)	Licence Schedule (A or C)	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works ((i) Not Started; (ii) At planning stage; (iii) Work ongoing on-site; (iv) Commissioning Phase; (v) Completed; (vi) Delayed;)	% Construction Work Completed	Timeframe for Completing the Work	Comments
None	N/A	N/A	N/A	N/A	N/A	N/A	

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

Table 4.2.2 - Improvement Programme Summary

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comments
	None	*WWTP assessment (Condition 5.2).*	N/A	N/A	
	None	*Sewer Integrity Tool (Condition 5.2).*	0	2015	Unused to date
	None	*Secondary discharges assessment (Condition 5.2).*	N/A	N/A	
	N/A	*SWO assessment (Condition 4 & 5.2).*	N/A	N/A	
	None	*Drinking Water Abstraction Risk Assessment (Condition 4)*	Complete	N/A	See Appendix 7.4.
	N/A	*Shellfish Impact Risk Assessment (Condition 5)*	N/A	N/A	
	N/A	*Pearl Mussel Impact Assessment (Condition 4)*	N/A	N/A	
	None	*Improved Operational Control*	N/A	N/A	
	None	*Incident Reduction*	N/A	N/A	
	None	*Elimination/Reduction of Priority Substances*	N/A	N/A	

Improvements identified above also include measures taken to prevent environmental damage anticipated following events or accidents/incidents associated with discharges or overflows from the waste water works and as such are considered to fulfil any Statement of Measures requirements. Refer also to Appendix 7.1 which summarises the Annual Statement of Measures.

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***	***Comment***
Hydraulic Risk Assessment Score	*medium*	*unknown*	*The SIRAT was not used in 2014*
Environmental Risk Assessment Score	*medium*	*unknown*	*The SIRAT was not used in 2014*
Structural Risk Assessment Score	*medium*	*unknown*	*The SIRAT was not used in 2014*
Operation & Maintenance Risk Assessment Score	*medium*	*unknown*	*The SIRAT was not used in 2014*
Overall Risk Score for the agglomeration	*medium*	*unknown*	*The SIRAT was not used in 2014*

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required in 2014 AER or outstanding from previous AER	Included in 2014 AER	*Reference to relevant section of AER (e.g. Appendix 2 Section4.*
Priority Substances Assessment	No	No	Included in 2011 AER.
Drinking Water Abstraction Point Risk Assessment	No	Yes	See Appendix 7.4.
Habitats Impact Assessment	No	No	N/A
Shellfish Impact Assessment	No	No	N/A
Pearl Mussel Report	No	No	N/A
Toxicity/Leachate Management	No	No	N/A
Toxicity of Final Effluent Report	No	No	N/A

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	N/A	N/A
Drinking Water Abstraction Point Risk Assessment	Yes	Overall risk is low
Habitats Impact Assessment	N/A	N/A
Shellfish Impact Assessment	N/A	N/A
Pearl Mussel Report	N/A	N/A
Toxicity/Leachate Management	N/A	N/A
Toxicity of Final Effluent Report	N/A	N/A

5.1 Priority Substances Assessment

The Priority Substances Assessment report was submitted as part of the 2011 AER to the Agency. A summary of the findings of this report is included below.

Table 5.1 - Priority Substance Assessment Summary

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
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	Desk Top Study
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?	Yes
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	Yes

5.2 Drinking Water Abstraction Point Risk Assessment.

The Drinking Water Abstraction Point Risk Assessment report submitted as part of the 2011 AER, is included in Appendix 7.5. A summary of the findings of this report is included below.

Table 5.2 - Drinking Water Abstraction Point Risk Assessment Summary

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
Is a Drinking Water Abstraction Risk Assessment required in the 2014 AER (or outstanding from a previous AER)	Yes
Does the Drinking Water Abstraction Risk Assessment identify whether any of the discharges in Schedule A of the licence pose a risk to a drinking water abstraction	Yes
Does the assessment identify if any other discharge(s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)	Yes

What is the overall risk ranking applied by the licensee	L
Does the risk assessment consider the impacts of normal operation	Yes
Does the risk assessment consider the impacts of abnormal operation (e.g. incidents /overflows)	Yes
Does the risk assessment include control measures for each risk identified	Yes
Does the risk assessment consider operational control measures e.g? waste water incident notification to drinking water abstraction operator	Yes
Does the risk assessment include infrastructural control measures	Yes
Does the Improvement Programme for the agglomeration include control measures / corrective actions to eliminate / reduce priority substances identified as having an impact on receiving water quality?	Yes

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.

5.3 Shellfish Impact Assessment Report.

The Shellfish Impact Assessment report is not required for Inniskeen.

5.4 Toxicity / Leachate Management

The Toxicity / Leachate Management Assessment report is not required for Inniskeen.

5.5 Toxicity of the Final Effluent Report

The Toxicity of the Final Effluent report is not required for Inniskeen.

5.6 Pearl Mussel Measures Report

A sub-basin management plan in relation to Pearl Mussels is not required for Inniskeen.

5.7 Habitats Impact Assessment Report

The Habitats Impact Assessment report is not required for Inniskeen.

Section 6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

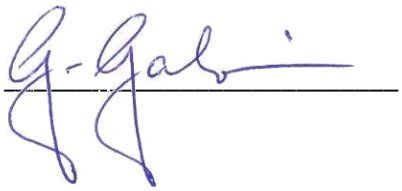
Does the AER include an executive summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration of a technical amendment / review of the licence?	No
List reason e.g. additional SWO identified *(insert lines as required)*	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 *(insert lines as required)*	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?	N/A
List outstanding reports *(insert lines as required)*	Sewer Integrity Risk Assessment

Declaration by Irish Water

The AER contains the following;

- Introduction and background to 2014 AER
- Monitoring reports summary.
- Operational reports summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports.
- Certification and Sign Off
- Appendices

I certify that to the best of my knowledge the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed:  Date: 14/04/2015

Gerry Galvin
Chief Technical Advisor

Section 7. Appendix

Appendix 7.1 - Annual Statement of Measures
Appendix 7.2 - Ambient monitoring summary
Appendix 7.4 - Drinking water risk assessment

Annual Statement of Measures

Risk /Description of issue	Risk Score	Mitigation Measure to be taken	Outcome	Action	Date for Completion	Owner/ Contact Person
No planned works for the Inniskeen WWTP					N/A	C McCrossan
No record of SWO activating or measurement or flows.		Install SWO measurement/recorder device to measure flows/record no. times it activates			Unknown	C McCrossan

Appendix 7.2 - Ambient monitoring summary

Upstream monitoring results

Location	Flow M3/day	Location	Date of Sampling	Sample Type (C or G)	pH	cBOD mg/l	COD mg/l	Suspended Solids mg/l	Ammonia (as N)	Total Phosphorus mg/l (as P)	Ortho P mg/l (as P)	Total Nitrogen mg/l (as N)	Nitrate (as N)	Nitrite (as N)	Faecal Coliforms cfu/100ml	E Coli mpn/100ml	Enterococci mpn/100ml
Inniskeen		Up Stream Of Works		G	8	1			0.014		0.031	2.3					
Inniskeen		Up Stream Of Works		G	8	1			0.009		0.017	2.2					
Inniskeen		Up Stream Of Works		G	8	1			0.037		0.013	1.7					
Inniskeen		Up Stream Of Works		G	8	1			0.025		0.009	1.2					
Inniskeen		Up Stream Of Works		G	8.1	1			0.036		0.009	1					
Inniskeen		Up Stream Of Works		G	8.1	1			0.034		0.027	1					
Inniskeen		Up Stream Of Works		G	8.2	1			0.048		0.009	1					
Inniskeen		Up Stream Of Works		G	7.7	2			0.064		0.057	1.1					
Inniskeen		Up Stream Of Works		G	8.2	1			0.01		0.011	1					
Inniskeen		Up Stream Of Works		G	8.2	1			0.022		0.054	1					

Inniskeen		Up Stream Of Works		G	7.7	1			0.018		0.028	1.6						
Inniskeen		Up Stream Of Works		G	7.8	2			0.014		0.044	1.9			93	1950	36	
Average						**1.17**			**0.028**		**0.026**	**1.417**						

Downstream monitoring results																		
Location	**Flow M3/day**	**Location**	**Date of Sampling**	**Sample Type (C or G)**	**pH**	**cBOD mg/l**	**COD mg/l**	**Suspended Solids mg/l**	**Ammonia (as N)**	**Total Phosphorus mg/l (as P)**	**Ortho P mg/l (as P)**	**Total Nitrogen mg/l (as N)**	**Nitrate (as N)**	**Nitrite (as N)**	**Faecal Coliforms cfu/100ml**	**E Coli mpn/100ml**	**Enterococci mpn/100ml**	
Inniskeen		Down Stream of Works	14/01/2014	G	8	1			0.019		0.055	2.3						
Inniskeen		Down Stream of Works	17/02/2014	G	8	1			0.008		0.02	2.3						
Inniskeen		Down Stream of Works	18/03/2014	G	8	1			0.044		0.034	1.8						
Inniskeen		Down Stream of Works	15/04/2014	G	8	1			0.023		0.009	1.3						
Inniskeen		Down Stream of Works	19/05/2014	G	8.1	1			0.029		0.011	1						

Inniskeen		Down Stream of Works	10/06/2014	G	8.2	1			0.033		0.028	1.6					
Inniskeen		Down Stream of Works	08/07/2014	G	8.2	1			0.044		0.01	1					
Inniskeen		Down Stream of Works	11/08/2014	G	7.8	2			0.056		0.061	1.1					
Inniskeen		Down Stream of Works	09/09/2014	G	8.2	1			0.007		0.009	1					
Inniskeen		Down Stream of Works	13/10/2014	G	8.2	1			0.026		0.016	1					
Inniskeen		Down Stream of Works	03/11/2014	G	7.8	1			0.023		0.034	1.5					
Inniskeen		Down Stream of Works	01/12/2014	G	7.8	2			0.011		0.045	1.7			240	727	30
Average						**1.17**			**0.027**		**0.028**	**1.467**					

Drinking Water Abstraction Risk Assessment Report

Under condition 4.17 of the licence '*a risk assessment for the protection of the downstream drinking water abstraction point'* is required. This risk assessment is assessing the impact of the Inniskeen waste water treatment plant and it's discharges on the receiving water, the River Fane, as there is a drinking water abstraction point (Cavan Hill water supply scheme) approximately 10km downstream of the primary discharge supplying Dundalk town and parts of County Louth.

Cavan Hill water supply scheme abstracts water from the River Fane at Stephenstown in County Louth and treats the water at a treatment plant located approximately 2km from the intake at 'Cavan Hill'. Cavan Hill water treatment plant is a large modern treatment plant using rapid gravity filtration. Dundalk Town Council have a Water Order for abstraction of 36,400m3/day from the River Fane, they are presently abstracting half of this amount producing an average of 18,000m3/day treated water for their consumers.

Inniskeen WWTP discharge has the potential to impact on the downstream water abstraction point at Stephenstown in relation to pollutant loading into the River Fane. The risk from the Inniskeen WWTP will be assessed under four separate headings with an overall risk ranking applied in conclusion:

(1) Level of treatment and capacity of WWTP.
(2) Discharge compliance.
(3) River Fane quality and monitoring data.
(4) Discharges impact during periods of normal and abnormal operation and control measures.

(1) Level of treatment and capacity of WWTP:
Inniskeen WWTP provides tertiary treatment with nutrient removal (phosphorus reduction). The plant is operated and maintained to a good standard with a caretaker 8 hours per day Monday to Friday and 2 hours Saturdays and Sundays. The plant runs automatically with monitors and meters linked to a SCADA system on site. The design P.E. of the plant is 1750. An assessment of the remaining capacities at the plant is outlined in section 4.1 of this AER, (tabulated in table 1.2, appendix 1). The conclusion of this is that there is adequate remaining hydraulic and Organic capacity at the treatment works based on the current loading.

The level of treatment and capacity of the treatment works is adequate to cater for the loading into the plant and to produce effluent compliant with licence requirements, thus the risk ranking for this element of the WWTP is applied as ***low risk***.

(2) Discharge Compliance:
Under Schedule B and condition 2 of the licence (ref. table 2.1, appendix 1 and section 2.2 of this AER report) the Inniskeen WWTP discharge had 2 exceedances in 2014. The impact of these exceedances on the receiving River Fane is assessed in section 2.3 of the report and concluded that there is adequate assimilative capacity in the river. Furthermore the ambient data indicates that there has been a significant improvement in upstream and downstream water quality compared to 2013. It is concluded that given the distance of 10km downstream from the discharge point to the Cavan Hill abstraction point, the risk to the abstraction would be low and assimilated. A regular monitoring and sampling program is in place for analysis of the discharge at the Inniskeen WWTP thus minimising the risk of pollution to the River Fane.

The risk ranking for this element of the discharge from the WWTP is therefore applied as '***low risk'***.

(3)River Fane quality and monitoring data.
The River Fane is not a designated Salmonid water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor is it identified as a sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA. The River Fane is in the Neagh Bann river basin district with overall status classified as poor and at risk of not meeting good status by 2015, with overall objective to restore it to good status by 2021, however, the 'point risk source' and potential for impact from the Inniskeen WWTP discharge on the river is categorised as '2b – not at risk' therefore it is not identified as impacting on the poor river quality status, (ref: WFD Ireland maps/website & reports.).

There has been a significant improvement in water quality in the river Fane with ambient results for BOD, Ammonia and Ortho P all below the EQS for at least good status.

EPA monitoring designates the river Fane as Q3-4 downstream of Inniskeen discharge location near the abstraction point at Stephenstown indicating 'good status' in the river at this location. The quality of the River Fane water downstream and the distance downstream of the drinking water abstraction point from the discharge point would indicate that the river can assimilate the discharge adequately and will not have a pollution effect over long distances. The risk ranking for this element of the discharge from the WWTP is therefore applied as '***low risk'***.

(4) Discharges impact during periods of normal and abnormal operation and control measures.
The impact of the Inniskeen discharge to the drinking water abstraction point at Stephenstown is considered minimal as discussed in points 1 to 3 above. Periods of abnormal operation at the plant would be considered to occur due to extreme storm conditions, equipment malfunction or breakdown, Power cut, or dumping of toxic waste e.g. diesel wash into the network. The impact to the treatment plant and discharge to the River Fane from these events occurring is minimised by having a plant operator on site every day at the plant, therefore identifying any abnormal events that occur and implementing control measures as necessary to alleviate them. There are is a storm tank on site, which has a storage capacity of 1.1 times the DWF of the plant, this means that the storm water overflow rarely activates, once per year or less which minimises the risk of any untreated effluent entering the River Fane. The controls and monitors at the treatment works are linked to a SCADA system on site, which is continually monitored by the plant operator, which would highlight any problem with the treatment plant equipment or treatment process. The risk of a chemical spill or overdose into the treatment system at the plant is minimised as the storage tanks for all chemicals are bunded and regular maintenance and calibration of the dosing pumps is undertaken. The dosing pumps setting are reviewed by the plant operators and technician over the plant in conjunction with assessment of the effluent parameters. Regular monitoring of the effluent also ensures that any deviations in the effluent parameters resulting from problems with the treatment process are addressed. In the event of a power cut, the electricity supply company will be contacted and a diesel generator on standby at the WWTP will be employed to enable the treatment plant to continue to operate. From past experience a power cut occurs twice per year and usually lasts 2 to 3 hours. There has been no incidents of illegal waste being dumped into the sewer network at Inniskeen, however given the proximity of the plant to the border of Northern Ireland and that the dumping of illegal diesel wash is prevalent in the Monaghan/Louth border area, consideration is given to this event occurring. If this event occurred, it may lead to a worst case scenario of the Inniskeen WWTP being effectively 'shut down' while a cleanup of the treatment plant is undertaken and removal of the toxic material and effected plant media to a licensed disposal facility in Germany. While the WWTP is unable to operate and treat the influent from the agglomeration, the influent could be tankered by a licensed haulier to a WWTP elsewhere in Monaghan with available capacity to treat it, until the WWTP is up and running again.

If there is an event at the plant that leads to a pollution incident in the River Fane, Monaghan County Council will immediately notify the downstream drinking water source, Louth County and Irish Water who are responsible for the downstream water abstraction water supply scheme, the EPA and the Inland Fisheries Board and implement any control measures and necessary works to address the incident.

From the occurrence of these periods of abnormal operation and the control measures in place to deal with them should they occur, the risk ranking for this element of the discharge from the WWTP is applied as '***low risk'***.

Conclusion:
From the risk ranking applied to the impacts of the Inniskeen WWTP discharge on the downstream drinking water abstraction point in county Louth in the four situations addressed previously in this section, it is concluded that the **overall risk is low**.