UISCE EIREANN : IRISH WATER MONAGHAN COUNTY COUNCIL

WASTE WATER DISCHARGE LICENCE REGISTER NUMBER: D0463-01 AGGLOMERATION: Knockaconny ANNUAL ENVIRONMENTAL REPORT 1st JANUARY 2013 - 31st DECEMBER 2013

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Knockaconny Waste Water Treatment Plant – Annual Environmental Report 2013

Document Amendment Record
Client: Uisce Eireann : Irish Water
Plant: Ballinode Waste Water Treatment Plant
Title: Annual Environmental Report 2013

Ref No.: D0463-01

DATE	Issue Purpose:	originated	Monaghan County Council: Approved:	Uisce Eireann : Irish Water Approved:
28th February 2014	Annual Environmental Report 2013 Document for Submission to the EPA:	MJ	C McCrossan S.E.	

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Section 1. Executive Summary and Introduction to the 2013 AER

1.1 Summary report on 2013

This is the first Annual Environmental Report (AER) for Knockaconny Village Wastewater Treatment Plant.

The Environmental Protection Agency granted a Waste Water Discharge Licence (Register No. D0463-01) in respect of the agglomeration named, to Monaghan County Council on the 04/09/2013

The purpose of this Annual Environmental Report (AER) is to provide a summary of activities relevant to the discharges from 1st January 2013 to the 31st December 2013 as required under Condition 6.8 of the discharge licence. The Annual Environmental Report (AER) for the Knockaconny Agglomeration includes the information specified in Schedule D of the Wastewater Discharge Licence D0463-01.

The Water Works comprises a network of gravity sewers, associated rising mains and the wastewater treatment plant at Knockaconny. There is one emergency overflow located at the treatment plant site which discharges to the Blackwater River downstream of the effluent discharge point. The plant is supervised/manned for 2 hours Monday to Friday and for 0.5 hours Saturday and Sunday, giving a total of 11 hours a week. The Waste Water Treatment Works design capacity is 'over' 1000 PE. The Works currently collects and treats domestic and trade effluent from a population equivalent of approximately 270. The Waste Water Treatment Plant treats in the region of 61 cubic metres of effluent every day and provides secondary treatment for the effluent.

For 2013, the treated effluent has an average BOD concentration of 2mg/l; COD of 45mg/l and average suspended solids concentration of 10mg/l. Average concentrations of nutrients are as follows; orthophosphate 4.73mg/l (P), Ammonia 0.11mg/l and pH 7.4. The primary discharge of the Waste Water Works is to the Blackwater River at National Grid Reference 268917E 335781N in the Townland of Knockaconny, Co. Monaghan. The associated Waste Water Treatment Plant is located at 268948E 335744N also in the townland of Knockaconny, Co. Monaghan.

The Blackwater (Monaghan) River has been identified by the Eastern Regional Fisheries Board as an important trout fishery. However, the river is not designated as salmonid water under EC (Quality of Salmonid Water) Regulations, 1988 and as such the river water quality is not required to meet the quality standards laid down in these regulations. The objective for the river is to attain "good status" by 2015 under the Water Framework Directive. The River is designated as nutrient sensitive from the confluence of the River Shambles to Newmills Bridge. The nearest flow monitoring data available on the Blackwater River is at the Faulkland Station (NGR 270400; 337900) (OPW Station 03051). The 95-percentile flow (m3/s) is given as 0.05m3/s and DWF as 0.03m3/s and median flow as 2.6m3/s (median flow based on Cappog Bridge median flow = 1.34/65km2 or 0.0207m3/s/km2. The catchment for Faulkland is 125km2 = approx 2.6m3/s).
A Q value of 3-4 was recorded upstream of the discharge point (250m d/s Br. Nr Milltown) in 2004. A previous Q value of 3 was recorded at this location in 2001 and 1998 (unpolluted).
EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2mg/l, median ortho-phosphate of 0.04mg/l, median total ammonia of 0.06mg/l and median oxidised nitrogen of 0.8mg/l. A Q value of 3 was recorded downstream of the discharge point (Station No. 0650) Faulkland Br (nearest d/s monitoring location) in 2004. A

previous Q value of 3/0 was recorded in 2001; Q3 was recorded at this location in 1998. EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2.5mg/l, median ortho-phosphate of 0.06mg/l, median total ammonia of 0.18mg/l and median oxidised nitrogen of 1.5mg/l. The overall River Water Framework Directive status for the Blackwater River is 1a, hence it is at risk of failing to meet good status in 2015.

Monaghan County Councils **upstream** monitoring results, 2013, indicate relatively good water quality in the river, orthophosphate level recorded averaging at 0.037 mg/l P, average ammonia levels of 0.052 mg/l NH3-N, average BOD of <1 mg/l. Dangerous substances concentrations were below detection level for 4 of the 19 parameters tested in April 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001. Results from the **downstream** monitoring site (aSW1(P)d) indicates generally good water quality with orthophosphate levels of 0.047 mg/l P recorded for 2013, average ammonia 0.053 mg/l NH3-N, average BOD of <1mg/l. Dangerous substances concentrations were below detection level for 5 of the 19 parameters tested in April 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.
Therefore comparing these upstream and downstream figures, only an increase in orthophosphate level of .010mg/l was detected over these suit of quarterly results taken in 2013. This is not significant, but some form of phosphorus removal should be considered for the plant.
The assimilative capacity calculations above indicate that there is significant dilution capacity within the receiving water, even at low flows, to assimilate discharges from the Waste Water Works in terms of suspended solids and BOD and that the EQS are met downstream of the discharge point for the mean, 50-percentile and 95-percentile flow conditions. Predicted MRP concentrations were slightly elevated from the target level of 0.03mg/l (Phosphorus regulations, 1998). Overall the results of the assimilative capacity are consistent with the physiochemical water quality monitoring results (EPA and Monaghan Co Co Data) and indicate that the discharges from the works are not having a significant detrimental impact on the receiving environment.

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Monaghan County Council's summary on influent monitoring for Knockaconny WWTP is tabulated in tables 1.1 and 3 attached in appendix 1.

Table 1.1

Influent monitoring summary

	BOD mg/l	COD mg/l	SS mg/l	Total P mg/l P	Total N mg/l N	Volumetric Loading m3/day	Loading PE/day
Number of samples	6	6	6	6	6	n/a	n/a
Maximum result	353	1381	558	15	124	221	
Annual Mean	266	862	373	11	78	61	270

The influent monitoring summary table 1.1 above, details the number of influent samples taken, the maximum and mean results for each parameter and the organic and hydraulic loading for the WWTP in 2013.

Flows Incoming to WWTP:

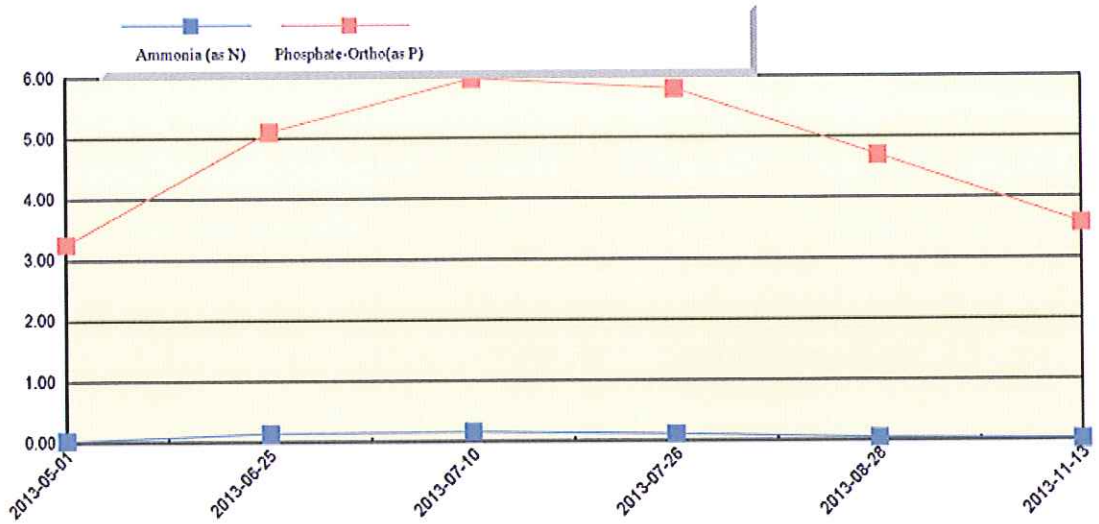
Date	m3/day Inflow	m3/day Outflow
31/01/2013	234	
30/04/2013	69	
25/06/2013	63	
10/07/2013	18	
23/07/2013	20	
28/08/2013	41	
13/11/2013	115	No flow measuring device
01/05/2013	57	
25/06/2013	32	
10/07/2013	9	
26/07/2013	28	
28/08/2013	41	
	AVG=61	m3/day
	MAX=234	m3/day

2.2 Discharges from the agglomeration

A summary presentation of monitoring results for the primary discharge SW1(P) (National Grid Reference 268917E, 335781N.) are tabulated in table 2.2 below and NH4 and OrthoP graphed. The Emission Limit Value's (ELVs) where applicable are included in the heading columns, exceedances highlighted in red text in accordance with schedule A.1 of the licence. Six samples are required under schedule B of the licence. pH monitoring is required daily for the effluent, this is recorded daily on site by the caretaker along with flow figures and visual inspection details. All pH values recorded for 2013 ranged between 6 and 9, the lowest figure recorded 6.7 and the highest figure 7.9.

There were 1No exceedances of ELVs for Ortho P parameter at the Knockaconny WWTP in 2013, as shown in graph below, but not reported to EPA in 2013, because, (a) the licence was only granted 4th September 2014 and (b) under condition 2 interpretation, 20% over the ELV is allowable therefore this equates to 3.6mg/l, therefore no emission exceeds this figure after licensing date.

The removal efficiencies for the WWTP for BOD, COD are tabulated in table 3.1 (section 3), summarised in section 3 of this document.



Above: Graph showing peak in Ortho-P over summer months in Effluent discharge at Knockaconny WWTP

TABLE 2.2 EFFLUENT MONITORING SUMMARY TABLE

Knockaconny		schedule A4: 1No Max number of samples that may exceed ELV						
		Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Chemical Oxygen Demand	Orthophosphate (P)	pH	Suspended Solids	Total Nitrogen (N)
ELV		5	20	125	3	6-9	35	–
Sample Template	Sample Date	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l
Effluent	01/05/2013	< 0.035	< 2	56	3.259*	7.4	< 5	30.7
Effluent	25/06/2013	0.14	< 1	62	5.101*	7.6	23	48.7
Effluent	10/07/2013	0.155	6	46	5.972*	7.8	12	57.3
Effluent	26/07/2013	0.115	< 1	< 8	5.798*	7.9	< 5	60.6
Effluent	28/08/2013	0.045	< 1	34	4.703*	6.7	< 5	36.8
Effluent	13/11/2013	< 0.035	< 1	25	3.572*	7.1	11	
6No	**Knockaconny**	**6**	**6**	**6**	**6**	**6**	**6**	**5**
	AVERAGE	0.11	2	45	4.73	7.4	10	47
	MAXIMUM	0.155	6	62	5.972	7.9	23	61
Number of 2013 samples results above WWDL ELV		**0**	**0**	**0**	**6**	**0**	**0**	**0**
Overall compliance WITH Cond.2 interp.		**pass**	**pass**	**pass**	**Pass**	**pass**	**pass**	**pass**

*NOTE! No ELV exceedances because (a) the licence was only granted 4th September 2014 and (b) under condition 2 interpretation, 20% over the ELV is allowable therefore this equates to 3.6mg/l, therefore no emission exceeds this figure after licensing date.

Priority Substance Assessment

Under Schedule B.1 of the licence, there is a requirement that, *Priority Substances that are identified by the licensee in the effluent after undertaking a 'risk based assessment in accordance with the Guidance on the screening for Priority Substances for Waste Water Discharge Licences'*, should be monitored at least annually, by the licensee. A desktop study is undertaken as follows:

The Knockaconny WWTP catchment area serves a small rural village comprising primarily of domestic dwellings, along with a school, church and local shops. There are no industrial inputs to the waste water works or section 16 licenced companies discharging to the WWTP, or disposal of same at the waste water works. It can therefore be concluded from this desktop overview that there is no further screening necessary or required for organic compounds or metals. Furthermore, in 2009 when the initial discharge licence application for Knockaconny was compiled, monitoring of the influent and effluent discharges and upstream and downstream locations in the receiving Blackwater River was undertaken and analysed for dangerous substances and submitted with the application. There were no elevated levels of these compounds in the discharge as reported. It is therefore concluded that no further screening is required for KnockaconnyWWTP with regard to Priority substances.

2.3 Ambient monitoring summary

A Graphical summary presentation of the ambient monitoring results are shown below, for the upstream (National grid reference 262979E 335758N) and downstream (National grid reference 263809E 335772N) receiving waters and are tabulated in tables 4 and 4.1, Table 5 and 5.1 attached in appendix 1.

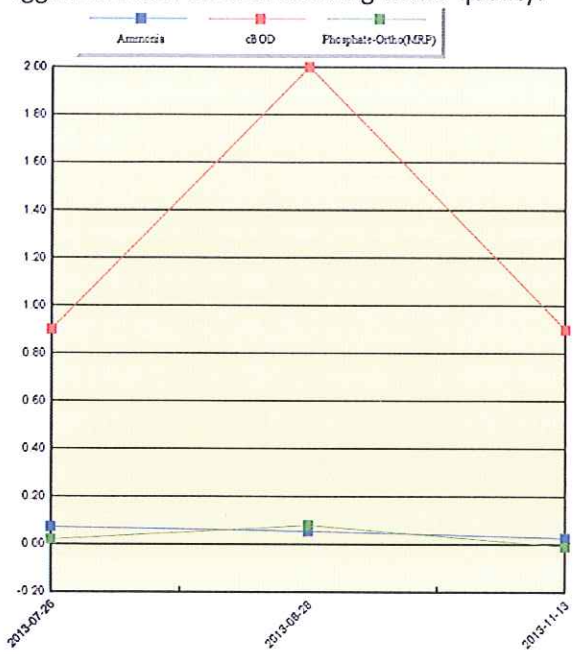
The primary discharge from the WWTP is to the Blackwater Monaghan River (at National Grid Reference SW1(P) 268917E, 335781N.) in the town land of Quiglough, Ballinode, Co Monaghan.

The Blackwater River is not a designated Salmonid Water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor is it identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA.

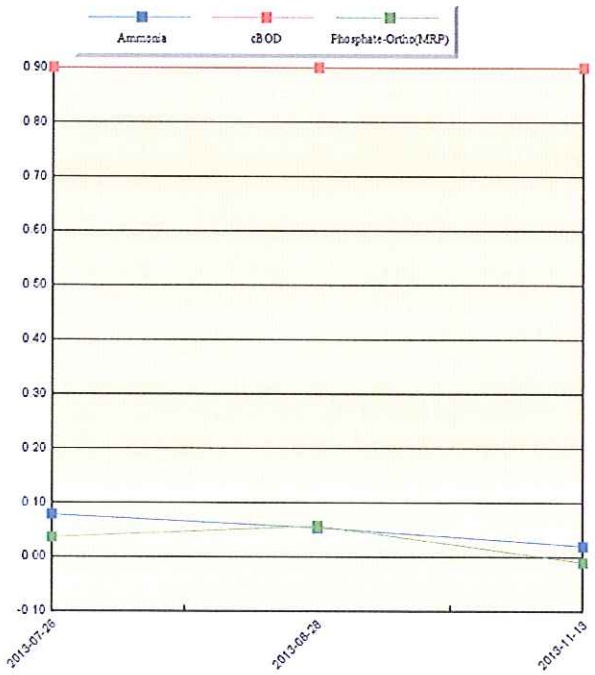
The Blackwater Water River is in the Neagh Bann river basin district with overall status classified as 'Good' but deemed '1a- at risk' with overall objective to protect its status. The 'point risk source' and potential for impact from the Knockaconny WWTP discharge on the river is categorised as 'not at risk', and the Blackwater Water Management Unit Action Plan (WMU) does not list the WWTP as impacting on the Blackwater River (Ref. WFD website & reports).

There were 6 sample analyses carried out in 2013 for the ambient monitoring, both upstream and downstream of the primary discharge. Dissolved Oxygen (DO) results recorded were all above 9mg/l and pH results between 6 and 9 in the receiving water for 2013. The results are assessed against the Surface Water Quality Regulations 2009, Environmental Quality Standards (EQS) for BOD, Total Ammonia and MRP (Ortho P) for Good Status Rivers at 'mean' flows. The average BOD results are lower than the 'mean' Good status EQS figure of 1.5mg/l both upstream and downstream of the discharge. The downstream average Ortho P/MRP figure is higher than the 'mean' Good status EQS figure of 0.035mg/l, whereas the upstream results are all under the EQS figure, thus indicating the WWTP discharge may be influencing this parameter for the worse. Total Ammonia average figures are under the 'mean' Good status EQS figure of 0.065mg/l both upstream and downstream in the receiving river, with one result higher than the EQS on the 26/07/2013 of 0.07mg/l downstream and

also upstream, thus indicating that there are other sources causing the EQS failures upstream of the WWTP. From this assessment and the fact that the primary discharges complied with their ELVs in 2013, it is concluded that there is no significant impact from the discharge of the Knockaconny agglomeration on the receiving water quality.



Above: Graph of downstream results



Above: Graph of Upstream results

2.4 Data Collection and reporting requirements under the UWWT Directive.

This information will be submitted separately to the EPA through EDEN.

2.5 Pollutant Release and Transfer Register (PRTR).

The PRTR is not required for the Knockaconny agglomeration as the p.e. is less than 2,000.

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

Under condition 4.13, bi monthly monitoring of the influent is required for BOD and COD for mass loadings and removal efficiencies.

Table 3.1

Treatment Efficiency Report Summary

	cBOD mg/l (kg/day)	COD mg/l (kg/day)
Influent mass loading (kg/day)	266.00	862
Effluent mass emission (kg/day)	2	45
% Efficiency (% reduction of influent load)	99.25	94.78

The Knockaconny WWTP is generally considered to be operating efficiently as effluent results are compliant with licensed ELVs for 2013 (except for Ortho P) and the WWTP is achieving adequate removal efficiencies (average over 90%, ref. Table 3.1) for BOD, COD parameters.
Removal efficiencies for the parameter TN vary greatly throughout the year -there is no specific removal facility at the WWTP for the removal of nitrogen.

3.2 Treatment Capacity Report

The design capacity of the Knockaconny WWTP is detailed in table 3.2 below, there is adequate hydraulic and organic capacity available at the WWTP from average flow/load figures for 2013. The hydraulic capacity was slightly exceeded using the maximum flow figures from the WWTP, the Knockaconny sewerage network is a separate collection system, however, there is no storm tank at the WWTP to contain excess inflows.

Table 3.2

Remaining Hydraulic & Organic treatment capacities (1000pe STW)	m3/day
Hydraulic Capacity - Design (M^3/day)	225
Hydraulic Capacity - Current loading (M^3/day)	61
Hydraulic Capacity - Remaining (M^3/day)	**164**
Organic Capacity - Design (PE)	1000
Organic Capacity - Current loading (PE)	270
Organic Capacity - Remaining (PE)	**730**
Will the capacity be exceeded in the next 3 years?	no

3.3 Complaints Summary

There were no complaints of an environmental nature related to the discharge to waters from the Ballinode WWTP in 2013.

3.4 Reported Incidents Summary

There were no reportable incidents to the EPA in 2013 relating to the Waste water works.

Section 4. Infrastructural Assessment & Programme of Improvements

4.1 Storm water overflow identification and inspection report

As per condition 4.11 of the licence, a report on the investigation for the identification and assessment of storm water overflows is required to be submitted as part of the **second** AER (this being the first AER), including a determination of compliance with the criteria for storm water overflows as set out in the DoECLG '*procedures and Criteria in Relation to Storm Water Overflows,*' 1995.

There are no known storm water overflows (SWO) within the sewerage network of the agglomeration. There is one SWO from inlet works at the WWTP that discharges to the Blackwater River, this SWO is listed in Schedule A.4 of the discharge licence.

The Storm Water Overflow (SWO) from the Knockaconny WWTP is as follows, there is no storm tank at the WWTP, there is a storm discharge pipe from the inlet works that discharges to the Blackwater River via the Primary discharge pipe when excessive inflows occur into the plant.

An assessment of this SWO in relation to the 'Procedures and criteria in relation to Storm Water Overflows', 1995 document is undertaken under the relevant sections as follows:

Section 4. *'Assessment Criteria for Existing SWO's':*

(1) It does not cause visual/aesthetic impact or public complaints.
(2) No analyses have been carried out on this SWO as it activates rarely, only in prolonged or severe storm conditions and there is no monitoring device on it. However, it is concluded that there would be minimal deterioration in water quality in the receiving

water when it operates, as discharge would be diluted due to storm water inflows coinciding with high river flows, thus maximising the assimilative capacity of the receiving water.

(3) It does not give rise to failure in meeting the requirements of national Regulations on foot of EU Directives as it is not a bathing water, nor a designated River.

(4) It does not operate in dry weather.

Section 5, *'Options following Assessment'*

The 'use of storage' option is considered under this document as the SWO is from a storm tank.

Section 7, *'Use of Storage'*

NONE

Appendix 1, Table 2:

A. *'Low Significance SWOs'*

The SWO is in the 'Low significance SWO' category.

Appendix 2, A. *'Low Significance SWOs'*

The volume of any proposed storm tank is assessed using Appendix 2, Table 3 of the DoECLG document as follows:
The nearest flow monitoring data available on the Blackwater River is at the Faulkland Station (NGR 270400; 337900) (OPW Station 03051). The 95-percentile flow (m3/s) is given as 0.05m3/s and DWF as 0.03m3/s

The dilution factor is the river at 95 percentile river flows relative to the dry weather flow to the plant calculated as follows:

WWTP DWF =	70m3/day = 0.000810m3/s
Blackwater River 95% flow =	0.05m3/s
Dilution Factor =	(0.05/0.000810) = 61

The storm tank volume required based on a dilution factor > 8 is 'None' (ref Table 3, Appendix 2, DoECLG document). As there is no storage tank employed at the WWTP, it is deemed to comply with this part of the document.

From the assessment of this SWO in relation to the 'Procedures and criteria in relation to Storm Water Overflows', 1995 document, it is concluded that the SWO complies with the document as assessed under section 4.1 of this document.

SWO Identification and Inspection Summary Report Table A:

WWDL Name/Code for Storm Water Overflow	SW1 SW overflow point
IGR	268917E 335781N
Included in Schedule A4 of the WWDL	Yes
Compliance with DoEHLG Criteria	Complies as assessed in Section 4.1 of this document
No. of times activated in 2013	1
Total volume discharged (m3)	Unknown
Total volume discharged in 2013 (P.E.)	Unknown
Estimated/Measured Data	Estimated

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

As per condition 5.1 of the licence, a programme of infrastructural improvements to maximise the efficiency and effectiveness of the waste water works shall be prepared and submitted:

In the licence, under schedule C, there are no specified improvements. There are no planned improvement works for the WWTP.

The WWTP is considered to be operating efficiently as effluent results are compliant with specified ELVs in the discharge licence and the WWTP is achieving adequate removal efficiencies (over 90%, ref. Table 1.3) for BOD, COD parameters,

The treatment capacity is addressed in section 3, with adequate remaining capacity at the WWTP.

Under condition 5.2 (a) of the licence, the programme of infrastructural improvements shall include an assessment of the waste water treatment plant having regard to the effectiveness of the treatment provided by reference to the following:

(i) The existing level of treatment, capacity of treatment plant and associated equipment:

As discussed in this report, the existing level of treatment at the plant is considered adequate based on ELV compliance and removal efficiencies. There is adequate capacity at the treatment plant.

(ii) The emission limit values specified in Schedule A: Discharges, of this licence:

The treatment plant is considered to be operating effectively but there were high levels of Orthophosphate in 2013 at the WWTP although not ELV exceedances because (a) the licence was only granted 4th September 2014 and (b) under condition 2 interpretation, 20% over the ELV is allowable therefore this equates to 3.6mg/l, therefore no emission exceeds this figure after licensing date.

(iii) The designations of the receiving water body:

Under the Blackwater water management unit (WMU) action plan, Knockaconny is not suggested to be having an impact on the receiving water as there is adequate dilution in the river at that location. The WMU suggests implementing a Performance Management system, which this report and other performance measures taken are deemed to satisfy.

The receiving Blackwater River is not a designated Salmonid Water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988), but it is identified in part, as

sensitive water, at this location, from the confluence of the River Shambles to Newmills Bridge, in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA. The Blackwater Water River is in the Neagh Bann river basin district with overall status classified as 'Good' but deemed '1a- at risk' with overall objective to protect its status. The 'point risk source' and potential for impact from the WWTP discharge on the river is categorised as 'not at risk', and the Blackwater Water Management Unit Action Plan (WMU) does not list the WWTP as impacting on the Blackwater River (Ref. WFD website & reports). Ambient monitoring results were assessed in section 2.3 of this report and it is concluded that there is no significant impact from the discharge of the agglomeration on the receiving water quality.

(iv) Water quality objective for the receiving water body:

This item is addressed in point no. 4.2 (iii) above.

(v) The standards and volumetric limitations applied to any industrial waste water that is licensed to discharge to the waste water works:

There are no industries licensed to discharge to the waste water works.

Under condition 5.2 (b) of the licence, the programme of infrastructural improvements shall include an assessment of the integrity of the waste water works having regard to:

(i) Capacity of the waste water works:

There is adequate capacity at the treatment plant (ref section 2.1, Table 1.2).

(ii) Leaks from the waste water works:

There are no known leaks at the WWTP site.

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

There are no known misconnections on the Ballinode network.

(iv) (v) Infiltration by surface water/ground water:

The network is a separate system, therefore during storm conditions/periods of extensive rainfall, inflows into the WWTP don't increase greatly.

Under condition 5.2 (c) of the licence, the programme of infrastructural improvements shall include an assessment of all storm water overflows associated with the waste water works to determine the effectiveness of their operation and in particular identify improvements necessary to comply with the requirements of this licence:

There are no specified improvement works in the discharge licence and no planned improvement works for the WWTP.

An assessment of the SWO from a storm tank at the WWTP in relation to the 'Procedures and criteria in relation to Storm Water Overflows', 1995 document, was addressed in section 4.1 of this report, it is concluded that the SWO complies with the document as assessed under section 4.1.

Condition 5.3 (a) and (b) of the licence, the programme of infrastructural improvements shall include a plan for implantation for each individual improvement identified:

There is no specified improvement works under schedule C1 or C2 of the discharge licence. One individual improvement identified for the WWTP is the addition of a ferric dosing system to reduce OrthoP.

Improvement Summary Table

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date
Implement a phosphorus removal system	Lower ortho-P levels discharging form the WWTP		0%	Dependant on Irish Water Funding
Mechanical screener ay inlet works	To remove screenings at inlet works to prevent them going forward into treatment process		0%	Dependant on Irish Water Funding
No record or measurement of outflows or flows into river.	Install magmeter flow measurement/recorder device to measure flows		0%	Dependant on Irish Water Funding

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required in 2013 AER or outstanding from previous AER	Included in 2013 AER	Reference to relevant section of AER
Priority Substance Assessment	No	Yes	Section 2.2
Drinking Water Abstraction Point Risk Assessment	No	No	N/A
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

Section 6. Certification and Sign Off

Annual Statement of Measures

Risk /Description of issue	Risk Score	Mitigation Measure to be taken	Outcome	Action	Date for Completion	Owner/ Contact Person
Ortho-P ELV exceedances in 2014 and beyond	4x4	Implement a phosphorus removal system to lower ortho-P levels discharging form the WWTP			Dependant on Irish Water Funding	C McCrossan
Screenings bypassing hand raked screen-	3x3	Fit Mechanical screener at inlet works to remove screenings at inlet works to prevent them going forward into treatment process			Dependant on Irish Water Funding	C McCrossan
No record or measurement of outflows or flows into river.	5x5	Install magmeter flow measurement/recorder device to measure flows			Dependant on Irish Water Funding	C McCrossan

I confirm the above are the measures which will be taken in the local Authority subject to IW funding arrangements.

Signed: Con M' Crossan **Job Title:** A/SE

Name: Con M' CROSSAN **Date:** 27/2/2014

Certification and Sign Off

Does the AER include and executive summary	Yes
Does the AER include and assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements/EQS)	Yes
Is there a need to advise the EPA for consideration of a technical amendment/review of the licence?	No
List reason e.g. additional SWO identified	N/A
Is there a need to request/advise the EPA of any modifications to the existing WWDL? (ref. cond. 1.7 & cond. 4)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	N/A
List outstanding reports	N/A

Signed by: Con H' Loscle Date: 27/2/2014

Position in Organisation: A/SE

SECTION 7 APPENDIX 1

TABLE 3 TABLE 3 INFLUENT MONITORING SUMMARY TABLE

Sample Template	Sample Date	Ammonia (N) mg/l	BOD, 5 days with inhibition (CBOD) mg/l	Chemical Oxygen Demand mg/l	Orthophosphate (P) mg/l	pH pH units	Suspended Solids mg/l	Total Nitrogen (N) mg/l	Total Phosphorus (P) mg/l
Influent	01/05/2013		301	1129			360	123.7	14.4
Influent	25/06/2013		169	428			225	69.2	8.31
Influent	26/07/2013		353	759			385	68.7	6.42
Influent	28/08/2013		201	503			212	67.5	8.94
Influent	13/11/2013		269	1381			558	96.5	14.8
Influent	10/12/2013		303	971			500	45	11.2
6No.	**Knockaconny**								
	AVERAGE		**266**	**862**			**373**	**78**	**11**
	MAXIMUM		**353**	**1381**			**558**	**124**	**15**

TABLE 4: Downstream results:

Sample Date	Ammonia (N) mg/l	BOD, 5 days with inhibition (CBOD) mg/l	Orthophosphate (P) mg/l
01/05/2013	0.057	< 1	0.042
26/07/2013	0.073	< 1	0.02
28/08/2013	0.055	2	0.08
13/11/2013	0.026	< 1	< 0.009

Table 4.1 Downstream continued pH, Dissolved oxygen (DO):

Date	Downstream		
	PH	temp	D.O.
31/01/2013	7.41	9.2	11.2
30/04/2013	7.71	9.6	11.87
25/06/2013	7.92	14.4	9.07
10/07/2013	8.01	22	6.98
23/07/2013	8.02	21.6	6.08
28/08/2013	7.81	15.3	8.63
13/11/2013	8.35	6.6	11.09

TABLE 5: Upstream Results:

Sample Date	Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Orthophosphate (P)
	mg/l	mg/l	mg/l
01/05/2013	0.055	< 1	0.017
26/07/2013	0.078	< 1	0.036
28/08/2013	0.053	< 1	0.057
13/11/2013	0.02	< 1	< 0.009

TABLE 5.1: Upstream Results continued pH, Dissolved oxygen (DO):

Date	Upstream		
	PH	temp	D.O.
31/01/2013	7.45	9.2	11
30/04/2013	7.65	9.6	11.23
25/06/2013	7.94	14.4	9.27
10/07/2013	7.98	22	6.83
23/07/2013	8.02	21.4	6.59
28/08/2013	7.82	15.5	8.13
13/11/2013	8.23	6.7	11.12