

# Annual Environmental Report 2015

<b>Agglomeration Name:</b>	<b>Ballinode</b>
<b>Licence Register No.</b>	<b>D0435-01</b>



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## Section 1. Executive Summary and Introduction to the 2015 AER

### 1.1 Summary Report on 2015

This Annual Environmental Report has been prepared for **D0435-01, Ballinode**, in County **Monaghan**, in accordance with the requirements of the wastewater discharge licence for the agglomeration. No specified report is included as an appendix to this AER.

The agglomeration is served by a wastewater treatment plant with a Design PE of 1000. The treatment process includes the following:-

- Preliminary Treatment (Screening)
- Primary Treatment (Primary Settlement)
- Secondary Treatment (RBC and Percolating Filter)
- Chemical dosing for phosphorus removal

The final effluent from the Primary Discharge Point was non-compliant with the Emission Limit Values in 2015.

The following parameters exceeded the emission limit values in 2015:-

- Ammonia NH<sub>3</sub> (mg/l)

243,000kgs (total weight) sludge was removed from the wastewater treatment plant in 2015 as liquid sludge. Sludge was transferred to Monaghan WWTP.

There were no major capital or operational changes undertaken in 2015

An Annual Statement of Measures is included in Appendix 7.1.

## Section 2. Monitoring Reports Summary

### 2.1 Summary report on monthly influent monitoring

Table 2.1 Influent Monitoring Summary

<b>2.1.1 Monthly Influent Monitoring</b>	<b>BOD (mg / l)</b>	<b>COD (mg / l)</b>	<b>SS (mg / l)</b>	<b>TP (mg / l)</b>	<b>TN (mg / l)</b>	<b>Hydraulic Loading (m3/d)</b>	<b>Organic Loading (PE/Day)</b>
<b>Number of Samples</b>	6	6	6	6	6		
<b>Annual Max.</b>	286	893	620	6.7	77.1	819	524
<b>Annual Mean</b>	109.90	291.10	148.19	1.91	23.25	144	419

#### 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.

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

The annual maximum organic loading is less than the Treatment Plant Capacity as detailed further in Section 3.2.

## 2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring

<b>2.2.1 Effluent Monitoring Summary</b>	<b>BOD (mg/l)</b>	<b>COD (mg/l)</b>	<b>TSS (mg/l)</b>	<b>Total P (mg/l)</b>	<b>Ortho P (mg/l)</b>	<b>Total N (mg/l)</b>	<b>Ammonia NH3 (mg/l)</b>	<b>pH</b>
<b>WWDL ELV (Schedule A) where applicable</b>	20	125	35	N/A	2	N/A	3	6 to 9
<b>ELV with Condition 2 Interpretation included</b>	40	250	87.5	N/A	2.4	N/A	3.6	No allowable exceedances
<b>Number of sample results</b>	7	7	7	7	7	6	7	7
<b>Number of sample results above WWDL ELV</b>	0	0	1	N/A	0	N/A	1	0
<b>Number of sample results above ELV with Condition 2 Interpretation</b>	0	0	0	N/A	0	N/A	1	0
<b>Annual Mean (for parameters where a mean ELV applies)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.00
<b>Overall Compliance (Pass/Fail)</b>	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass

### Significance of results

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There was 1 sample non-compliant with the ELV's in relation to ammonia. The non-compliance is due to clarifier disturbance. 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	Receiving Waters Designation (Y/N)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Upstream monitoring point	262979E 335758N	RS03B01200	N	N	N	N	Good	
Downstream monitoring point	263809E 335772N	RE03B01280	N	N	N	N	Good	Yes, due to BOD

The results for the upstream and downstream monitoring are included in Appendix 7.2 Ambient Monitoring Results.

### Significance of results

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

The discharge from the wastewater plant does have an observable negative impact on the water quality status.

The discharge from the wastewater plant does not have an observable negative impact on the Water Framework Directive status.

## 2.4 Data collection and reporting requirements under the UWWTD

The electronic submission of data was completed on 15/01/2016

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

A PRTR report is not required as this agglomeration is below 2,000 PE .

## Section 3. Operational Reports Summary

### 3.1 Treatment Efficiency Report

	<b>cBOD (kg/yr)</b>	<b>COD (kg/yr)</b>	<b>SS (kg/yr)</b>	<b>Total P (kg/yr)</b>	<b>Total N (kg/yr)</b>
Influent mass loading (kg/year)	9,179	24,314	12,377	160	1,942
Effluent mass emission (kg/year)	323	1,302	1,431	9	696
% Efficiency (% reduction of influent load)	96%	95%	88%	94%	64%

### 3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

<b>Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/year)</b>	82,490
<b>Hydraulic Capacity – Design / As Constructed (peak flow) (m3/year)</b>	248,565
<b>Hydraulic Capacity – Current loading (m3/year)</b>	52,600
<b>Hydraulic Capacity – Remaining (m3/year)</b>	195,965
<b>Organic Capacity - Design / As Constructed (PE)</b>	1,000
<b>Organic Capacity - Current loading (PE)</b>	419
<b>Organic Capacity – Remaining (PE)</b>	581
<b>Will the capacity be exceeded in the next three years? (Yes / No)</b>	No

### 3.3 Extent of Agglomeration Summary Report

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

**Table 3.3 - Extent of Agglomeration Summary Report**

	<b>% of total load generated in the agglomeration</b>
<b>Load generated in the agglomeration that is collected in the sewer network</b>	100%
<b>Load collected in the agglomerations that enters treatment plant</b>	100%
<b>Load collected in the sewer network but discharges without treatment</b>	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.

### 3.4 Complaints Summary

There were no complaints of an environmental nature in relation to Ballinode WWTP in 2015.

**Table 3.4 - Complaints Summary Table**

<b>Number</b>	<b>Date &amp; Time</b>	<b>Nature of Complaint</b>	<b>Cause of Complaint</b>	<b>Actions taken to resolve issue</b>	<b>Closed (Y/N)</b>
None					



### 3.5 Reported Incidents Summary

A summary of reported incidents is included below.

**Table 3.5.1 - Summary of Incidents**

<b>3.5.1 Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)</b>	<b>Incident Description</b>	<b>Cause</b>	<b>No. of Incidents</b>	<b>Corrective Action</b>	<b>Authorities Contacted. Note 1</b>	<b>Reported to EPA (Yes/No)</b>	<b>Closed (Yes/No)</b>
Non-compliance	Breach of ELV	Clarifier disturbance	1	Continue to monitor	EPA	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**

<b>Number of Incidents in 2015</b>	1
<b>Number of Incidents reported to the EPA via EDEN in 2015</b>	1
<b>Explanation of any discrepancies between the two numbers above</b>	N/A

### 3.6 Sludge / Other inputs to the WWTP

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

**Table 3.6 - Other Inputs**

Input Type	m3/year	PE/year	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Domestic /Septic Tank Sludge	0	0		N/A		
Industrial / Commercial Sludge	0	0		N/A		
Landfill Leachate (delivered by tanker)	0	0		N/A		
Landfill Leachate (delivered by sewer network)	0	0		N/A		
Other (specify)	0	0		N/A		

**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. Infrastructure Assessments and Programme of Improvements

### 4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report is included in the 2014 AER. A summary of the significance and operation is included below.

**Table 4.1.1 - SWO Identification and Inspection Summary Report**

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High/Med/Low)	Compliance with DoEHLG criteria	No. of times activated in 2015 (No. of events)	Total volume discharged in 2015 (m3)	Total volume discharged in 2015 (P.E.)	Estimated / Measured data
SWO	263000E 335849N	Yes	Low	Complaint	Unknown	Unknown	Unknown	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)?	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)	2014 AER Appendix 7.3
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1 ?	No

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

The Improvement Programme is included in Appendix 7.3

The Improvement Programme report included in Appendix 7.3 addresses the **Specified Improvement Programmes** as detailed in Schedules A3 and C of the WWDL. It also details other improvements identified through assessments required under the licence.

**Table 4.2.1 - Specified Improvement Programme Summary**

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Construction Work Completed	Licensee Timeframe for Completing the Work	Comments
None	N/A	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
High inflows into the Ballinode WWTP during storm conditions/periods of heavy rainfall	CCTV survey of network & remedial measures identified carried out	WWTP assessment (Condition 5.3)	0%	Unknown	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
Operation of STW without adequate flood alleviation	Flood control measure along river bank	2012 ELRA	0%	Unknown	The improvement programme

measures along river bank. (From 2012 ELRA)					will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
No record or measurement of SWO activating or flows.	Install SWO measurement/recorder device to measure flows/record no. times it activates	Cond. 4.1 of this report	0%	Unknown	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.

**Table 4.2.3 - Sewer Integrity Risk Assessment Tool Summary**

<b>The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:</b>	<b>Risk Assessment Rating (High, Medium, Low)</b>	<b>Risk Assessment Score</b>	<b>Comment</b>
<b>Hydraulic Risk Assessment Score</b>	Unknown	Unknown	SNIT has not been completed but will be submitted following submission of 2015 AER.
<b>Environmental Risk Assessment Score</b>	Unknown	Unknown	SNIT has not been completed but will be submitted following submission of 2015 AER.
<b>Structural Risk Assessment Score</b>	Unknown	Unknown	SNIT has not been completed but will be submitted following submission of 2015 AER.
<b>Operation &amp; Maintenance Risk Assessment Score</b>	Unknown	Unknown	SNIT has not been completed but will be submitted following submission of 2015 AER.
<b>Overall Risk Score for the agglomeration</b>	Unknown	Unknown	SNIT has not been completed but will be submitted following submission of 2015 AER.

## Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

<b>Licence Specific Report</b>	<b>Required in this AER or outstanding from previous AER</b>	<b>Included in this AER / Remains outstanding</b>	<b>Reference to previous AER containing report or relevant section of this AER</b>
<b>Priority Substances Assessment</b>	No	No	Appendix 7.6 , 2014 AER
<b>Drinking Water Abstraction Point Risk Assessment</b>	No	No	N/A
<b>Habitats Impact Assessment</b>	No	No	N/A
<b>Shellfish Impact Assessment</b>	No	No	N/A
<b>Pearl Mussel Report</b>	No	No	N/A
<b>Toxicity/Leachate Management</b>	No	No	N/A
<b>Toxicity of Final Effluent Report</b>	No	No	N/A

Licence Specific Reports Summary of Findings

<b>Licence Specific Report</b>	<b>Recommendations in Report</b>	<b>Summary of Recommendations in Report</b>	<b>Status of Recommendations</b>
<b>Priority Substances Assessment</b>	Yes	No further screening for priority substances required	N/A
<b>Drinking Water Abstraction Point Risk Assessment</b>	N/A	N/A	N/A
<b>Shellfish Impact Assessment</b>	N/A	N/A	N/A
<b>Pearl Mussel Report</b>	N/A	N/A	N/A
<b>Toxicity/Leachate Management</b>	N/A	N/A	N/A
<b>Toxicity of Final Effluent Report</b>	N/A	N/A	N/A
<b>Habitats Impact Assessment</b>	N/A	N/A	N/A

## 5.1 Priority Substances Assessment

The Priority Substances Assessment report is included in the 2014 AER. A summary of the findings of this report is included below.

**Table 5.1 - Priority Substance Assessment Summary**

	<i>Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.</i>
<b>Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance</b>	Desk Top Study and Screening Analysis
<b>Does the assessment include a review of Trade inputs to the works?</b>	Yes
<b>Does the assessment include a review of other inputs to the works?</b>	No
<b>Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)</b>	Yes
<b>Does the assessment identify that priority substances may be impacting the receiving water?</b>	No
<b>Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?</b>	No



## Section 6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

<b>Does the AER include an executive summary?</b>	Yes
<b>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)?</b>	Yes
<b>Is there a need to advise the EPA for consideration of a technical amendment / review of the licence?</b>	No
<b>List reason e.g. additional SWO identified</b>	Not applicable
<b>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) &amp; Condition 4 (changes to monitoring location, frequency etc.)</b>	No
<b>List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements</b>	N/A
<b>Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)</b>	N/A
<b>Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?</b>	No
<b>List outstanding reports</b>	Sewer Network Integrity Risk Assessment

### Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2015 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: 03/03/2016

**Gerry Galvin**  
Chief Technical Advisor

## Section 7. Appendix

In the appendix include all the detailed or site specific reports that are relevant to the AER. Reports omitted from previous AERs should also be appended here.

Appendix 7.1 - Annual Statement of Measures

Appendix 7.2 - Ambient monitoring summary

Appendix 7.3 – Specified Improvement Programme

- a) Specified Improvement Programme
- b) Programme of Improvements

## Appendix 7.1 Annual Statement of Measures

Risk / Description of issue	Risk Score	Mitigation Measure to be taken	Outcome	Action	Date for Completion
High inflows into the Ballinode WWTP during storm conditions/periods of heavy rainfall	Medium	CCTV survey of network & remedial measures identified carried out	Reduced flows to wwtp in storm conditions /periods of heavy rainfall	Remedial measures identified carried out	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
Operation of STW without adequate flood alleviation measures along river bank.	Medium	Flood control measure along river bank	Protect WWTP from Flooding	Flood Control Measure in Place	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
No record or measurement of SWO activating or flows.	Medium	Install SWO measurement/recorder device to measure flows/record no. times it activates	Records of activation and volumes discharged from SWO available to carry out assessment of impact on receiving water	SWO measurement /recorder in place	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.

## Appendix 7.2 Ambient Monitoring Results

Ballinode Upstream Monitoring Results								
Sampling Location	Sample Date	Sample Type	Dissolved Oxygen mg/l	Temp oC	Ammonia N mg/l	BOD, 5 days with Inhibition (Carbonaceous) mg/l	Ortho Phosphate mg/l	pH units
Ballinode WWTP Upstream	04/02/2015	Grab			0.21	3	0.036	7.8
Ballinode WWTP Upstream	08/04/2015	Grab	11.81	10.2	< 0.007	< 1	< 0.009	8
Ballinode WWTP Upstream	30/06/2015	Grab	8.92	17.1	0.052	1	0.012	8.1
Ballinode WWTP Upstream	12/08/2015	Grab	8.91	15.1	0.057	1	0.049	8
Ballinode WWTP Upstream	07/10/2015	Grab	9.33	12.5	0.031	1	0.072	8
Ballinode WWTP Upstream	01/12/2015	Grab	13.6	7	0.055	2.2	0.079	7.4
<b>Average</b>			<b>10.51</b>	<b>12</b>	<b>0.068</b>	<b>1.5</b>	<b>0.042</b>	<b>7.88</b>

Ballinode Downstream Monitoring Results								
Sample Location	Sample Date	Sample Method	Dissolved Oxygen mg/l	Temp oC	Ammonia N mg/l	BOD, 5 days with Inhibition (Carbonaceous) mg/l	Ortho-Phosphate mg/l	pH units
Ballinode WWTP Downstream	04/02/2015	Grab			0.27	2	0.043	7.9
Ballinode WWTP Downstream	08/04/2015	Grab	11.56	10.2	<0.007	<1	< 0.009	8.1
Ballinode WWTP Downstream	30/06/2015	Grab	8.86	17.1	0.094	3	0.029	8.1
Ballinode WWTP Downstream	12/08/2015	Grab	9.12	15.2	0.047	1	0.046	8.1
Ballinode WWTP Downstream	07/10/2015	Grab	10.07	11.7	0.041	1	0.029	8.2
Ballinode WWTP Downstream	01/12/2015	Grab	14.84	7	0.042	2.5	0.062	7.4
<b>Average</b>			<b>10.89</b>	<b>12.2</b>	<b>0.084</b>	<b>1.75</b>	<b>0.036</b>	<b>7.96</b>

## Appendix 7.3 Specified Improvement Programme

### Appendix 7.3 – Specified Improvement Programme

#### a) Specified Improvement Programme

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

The treatment capacity is addressed in section 3.2, 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 section 3.2 of 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 (section 3.2).

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

The treatment plant had an exceedance for Ammonia as specified and summarised in section 2.2 (Effluent Monitoring) of this report. There was no repeat of this exceedance in the months that followed.

(iii) The designations of the receiving water body:

The receiving 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 Ballinode 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 Ballinode agglomeration on the receiving water quality.

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

Ballinode WWTP discharges to the River Blackwater main channel. The Q value at 1km downstream is Q4 indicating GOOD water quality. The water quality objective for the waterbody is classified as good with a maintain 2015 objective in the Neagh Bann International River Basin Management Plan.

(ii) 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 (Section 3.2).

(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) Infiltration by surface water/ground water:  
Ballinode network is a combined system, during storm conditions/periods of extensive rainfall, inflows into the Ballinode WWTP increase greatly. It is unknown if there is infiltration by surface/ground water into the network. A CCTV survey of the network would identify any defects in the network and any remedial works required.

b) Programme of Improvements

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 Ballinode 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 C of the discharge licence. One individual improvement identified for the Ballinode sewer network is to carry out a CCTV survey of the network to identify and carry out remedial works necessary on the network.

### Improvement Summary Table

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comments
High inflows into the Ballinode WWTP during storm conditions/periods of heavy rainfall	CCTV survey of network & remedial measures identified carried out	WWTP assessment (Condition 5.3)	0%	Unknown	The improvement programme will be reviewed by Irish Water

					to assess the works required to comply with the licence condition on a prioritised basis.
Operation of STW without adequate flood alleviation measures along river bank. (From 2012 ELRA)	Flood control measure along river bank	2012 ELRA	0%	Unknown	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
No record or measurement of SWO activating or flows.	Install SWO measurement/recorder device to measure flows/record no. times it activates	Cond. 4.1 of this report	0%	Unknown	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.