

# Annual Environmental Report 2015

<b>Agglomeration Name:</b>	<b>Emyvale</b>
<b>Licence Register No.</b>	<b>D0346-01</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 **D0346-01, Emyvale**, 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 2150. The treatment process includes the following:-

- Preliminary Treatment (Screening)
- Primary Treatment (Primary Settlement Tanks)
- Secondary Treatment (RBC and Percolating Filters)
- Nutrient Removal (Ferric Dosing)

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:-

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

326,000kgs (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>	376	1415	360	11.6	85.2	778	676
<b>Annual Mean</b>	145.89	402.01	94.80	3.03	28.26	177.04	395.11

#### Significance of results

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

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

The 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>Ammonia NH3 (mg/l)</b>	<b>Total nitrogen</b>	<b>pH</b>
<b>WWDL ELV (Schedule A) where applicable</b>	14	125	35	N/A	0.75	1	N/A	6 to 9
<b>ELV with Condition 2 Interpretation included</b>	28	250	87.5	N/A	0.9	2	N/A	No allowable exceedances
<b>Number of sample results</b>	9	9	9	9	9	9	9	9
<b>Number of sample results above WWDL ELV</b>	0	0	0	N/A	3	6	N/A	0
<b>Number of sample results above ELV with Condition 2 Interpretation</b>	0	0	0	N/A	1	5	N/A	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	N/A
<b>Overall Compliance (Pass/Fail)</b>	Pass	Pass	Pass	Pass	Fail	Fail	Pass	Pass

### Significance of results

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 6 samples non-compliant with the ELV's in relation to orthophosphate and ammonia. The ELV with condition 2 interpretation was exceeded on one occasion for ortho P and on 5 occasions in 2015 for Ammonia. The non-compliance is due to plant / equipment breakdown and inadequate training on one occasion. The impact on the receiving waters is detailed 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	267744E 343773N	RS03M010450	N	N	N	N	Poor	N/A
Downstream monitoring point	269400E 343137N	RS03M010500	N	N	N	N	Poor	No

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 ELVs set in the wastewater discharge licence as detailed in Section 2.2.

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

The discharge from the wastewater plant doesn't have an observable negative impact on the WFD 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 is not required for the Emyvale agglomeration as the PE 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)	8,653	23,844	5,623	180	1,676
Effluent mass emission (kg/year)	230	1,392	348	14	865
% Efficiency (% reduction of influent load)	97%	94%	94%	92%	48%

### 3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

<b>Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/year)</b>	178,120
<b>Hydraulic Capacity – Design / As Constructed (peak flow) (m3/year)</b>	534,360
<b>Hydraulic Capacity – Current loading (m3/year)</b>	64,621
<b>Hydraulic Capacity – Remaining (m3/year)</b>	469,739
<b>Organic Capacity - Design / As Constructed (PE)</b>	2,150
<b>Organic Capacity - Current loading (PE)</b>	395
<b>Organic Capacity – Remaining (PE)</b>	1,755
<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>	Unknown
<b>Load collected in the sewer network but discharges without treatment</b>	Unknown

**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 is estimated based on influent monitoring as detailed in Section 2.1 above.

### **3.4 Complaints Summary**

A summary of complaints of an environmental nature is included below.

**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>
30489382 52	10/08/2015 13:06:00	Below Ground Waste Investigation Sewage Flooding	Block Sewer causing surcharge		Yes



### 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>
Emission	Breach of ELV - ammonia	Unknown	1	Process optimisation Visit by IW	IFI	Yes	Yes
Emission	Breach of ELV - ortho phosphate	Unknown	1	Ferric dosing increased	IFI	Yes	Yes
Emission	Breach of ELV - ortho phosphate	Inadequate prodedures/trainin g	1	Ferric dosing increased	No	Yes	Yes
Emission	Breach of ELV - Ammonia	Plant/equipment breakdown	1	Recent replacement of RBC	IFI	Yes	Yes
Emission	Breach of ELV - ammonia	Plant/equipment breakdown	1	RBC gearbox replaced	No	Yes	Yes
Emission	Breach of ELV - ammonia	Plant/equipment breakdown	1	RBC repairs ongoing	No	Yes	Yes
Emission	Breach of ELV - ammonia	Unknown	1	Desludge & monitor	No	Yes	Yes
Emission	Breach of ELV - ammonia	Plant/equipment maintenance	1	Investigate and monitor	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**

<b>Number of Incidents in 2015</b>	7
<b>Number of Incidents reported to the EPA via EDEN in 2015</b>	8
<b>Explanation of any discrepancies between the two numbers above</b>	Incident on 01/09/15 reported twice.

### 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	m <sup>3</sup> /year	PE/year	% of load to WWTP	Included in Influent Monitoring (Y/N)? <sup>3</sup>	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.
3. If any inputs were introduced **prior** to influent monitoring point and therefore already reported in S.2.1 *Influent Monitoring Summary*, then clarify this to avoid duplication and over-reporting of PE.

## 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 of the SWO 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	267952E 343568N	Yes	Low	Compliant	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?	No
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	N/A
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1 ?	N/A

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

The Improvement Programme 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
Commissioning and operation of ferric sulphate dosing unit	C	01/01/2013	Yes	Completed	100%		Ferric dosing system is operational

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
High inflows into the Emyvale WWTP during storm conditions/periods of heavy rainfall	CCTV survey of network and remedial measures identified carried out.	WWTP assessment (Condition 5.2).	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.
		Sewer Integrity Tool (Condition 5.2).			
		Secondary			

		discharges assessment (Condition 5.2).			
No record of SWO activating or measurement of flows.	Install SWO measurement/recorder device to measure flows/record no. Times it activates	SWO assessment (Condition 4 & 5.2).	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
	N/A	Pearl Mussel Impact Assessment (Condition 4)	N/A	N/A	
		Improved Operational Control			

**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	
<b>Environmental Risk Assessment Score</b>	Unknown	Unknown	
<b>Structural Risk Assessment Score</b>	Unknown	Unknown	
<b>Operation &amp; Maintenance Risk Assessment Score</b>	Unknown	Unknown	
<b>Overall Risk Score for the agglomeration</b>	Unknown	Unknown	

The 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	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	2014 AER – no further screening required	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 <i>and</i> 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>	N/A
<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

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

### 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 Emyvale WWTP during storm conditions/periods of heavy rainfall	Medium	CCTV survey of network & remedial measures identified carried out	Improved operational control during storm events	CCTV and carry out remedial measures identified	Dependant on Irish Water Funding
No record of SWO activating or measurement or flows.	Medium	Install SWO measurement/recorder device to measure flows/record no. times it activates his report	Records of activation of SWO and volumes discharged to receiving water	Install SWO measurement recorder device	Dependant on Irish Water Funding

## Appendix 7.2: Ambient Monitoring Results

Emyvale 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
Emyvale WWTP Upstream	28/01/2015	Grab	11.98	5	0.12	4	0.091	7.8
Emyvale WWTP Upstream	31/03/2015	Grab	11.68	6.7	0.07	2	0.015	7.7
Emyvale WWTP Upstream	19/05/2015	Grab	11.3	10.2	0.031	< 1	0.017	8.2
Emyvale WWTP Upstream	15/07/2015	Grab	11.14	14.7	0.014	1	0.013	8.1
Emyvale WWTP Upstream	11/08/2015	Grab	10.52	15	0.038	1	0.035	8.2
Emyvale WWTP Upstream	10/11/2015	Grab	14.41	11.1	0.026	< 1	0.054	7.8
<b>Average</b>			<b>11.84</b>	<b>10.45</b>	<b>0.05</b>	<b>1.67</b>	<b>0.038</b>	<b>7.97</b>

Emyvale Downstream Monitoring Results								
Sample 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 P mg/l	pH units
Emyvale WWTP Downstream	28/01/2015	Grab	12.14	4.4	0.091	4	0.086	7.8
Emyvale WWTP Downstream	31/03/2015	Grab	11.74	6.7	0.05	2	0.101	7.8
Emyvale WWTP Downstream	19/05/2015	Grab	11.6	10.2	0.037	< 1	0.018	8.2
Emyvale WWTP Downstream	15/07/2015	Grab	9.8	13.8	0.049	1	0.016	7.9
Emyvale WWTP Downstream	11/08/2015	Grab	10.04	17.1	0.069	1	0.035	8.3
Emyvale WWTP Downstream	10/11/2015	Grab	14.52	11.2	0.031	< 1	0.053	7.9
<b>Average</b>			<b>11.64</b>	<b>10.57</b>	<b>0.055</b>	<b>1.67</b>	<b>0.052</b>	<b>7.98</b>

## Appendix 7.3 Specified Improvement Programme

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

**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:**

The treatment capacity and removal efficiencies of the Emyvale WWTP are addressed in section 2.1 and 3.1 of this report.

Under Schedule C.1 of the licence, ‘Specified Improvement Programme’, ‘Commissioning and operation of the ferric Sulphate dosing unit’ is specified with completion date of 1<sup>st</sup> January 2013. The ferric dosing unit has been commissioned and is operating at the Emyvale WWTP.

No other specified improvement works are specified for the Emyvale WWTP.  
There are no planned improvement works for the Emyvale 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:**

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

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

The ELV’s as set out in Schedule A were breached on 6 occasions in 2015. On 1 occasions for ortho-p and on 5 occasions for Ammonia.

**(iii) The designations of the receiving water body:**

The Mountain Water 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 Mountain Water River is in the Neagh Bann river basin district with overall status classified as ‘1a’ –Poor status and at risk of not meeting good status by 2015, with overall objective to restore its status by 2021 The ‘point risk source’ and potential for impact from the Emyvale WWTP discharge on the river is categorised as ‘1a –at risk’ and the combined storm overflows (CSOs) categorised as ‘2b – not at risk’, however the Blackwater Water Management Unit Action Plan (WMU) states that EPA licence information suggests that Emyvale WWTP is not impacting on the receiving water as there is adequate dilution in the river, for the discharge (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 Emyvale 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 Emyvale network.

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

Emyvale network is a combined system, during storm conditions/periods of extensive rainfall, inflows into the Emyvale 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.

**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 Emyvale discharge licence in relation to storm water overflows.

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:**

Under Schedule C.1 of the licence, 'Specified Improvement Programme', 'Commissioning and operation of the ferric Sulphate dosing unit' is specified with completion date of 1<sup>st</sup> January 2013. The ferric dosing unit has been commissioned and is operating at the Emyvale WWTP.

There are no other specified improvement works under schedule C of the discharge licence. One individual improvement identified for the Emyvale sewer network is to carry out a CCTV survey of the network to identify and carry out remedial works necessary on the network.