



# Drinking Water Audit Report

<b>County:</b>	Galway	<b>Date of Audit:</b>	7 <sup>th</sup> January 2016
<b>Plant visited:</b>	Williamstown (scheme code 1200PUB1049)	<b>Date of issue of Audit Report:</b>	26 <sup>th</sup> January 2016
		<b>File Reference:</b>	DW2008/541 & DW2014/359
		<b>Auditors:</b>	Ms Aoife Loughnane Mr Darragh Page
<b>Audit Criteria:</b>	<ul style="list-style-type: none"> <li>• The <i>European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)</i>.</li> <li>• The <i>EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies (ISBN: 978-1-84095-349-7)</i></li> <li>• The recommendations specified in the <i>EPA Drinking Water Report</i>.</li> <li>• The recommendations in any previous audit reports.</li> <li>• The Regulation 9(2) Direction issued by the EPA on 21<sup>st</sup> November 2014 and associated Action Programme.</li> </ul>		

## MAIN FINDINGS

- i. **The EPA issued a Direction to Irish Water under Regulation 9(2) of the *European Union (Drinking Water) Regulations 2014* on 21<sup>st</sup> November 2014 requiring the submission of an Action Programme for the improvement of Williamstown PWS to ensure the water supply is adequately disinfected at all times, or to replace it with an alternative source by 21<sup>st</sup> November 2015. The Action Programme submitted by Irish Water and approved by the EPA consisted of an interim solution to install a containerised UV disinfection system at the plant, until the long-term solution to connect to Lough Mask Regional Water Supply Scheme is implemented. The auditors found that the interim solution has been achieved for the most part (validation testing is still underway) and that Irish Water has complied with the Direction and associated Action Programme to ensure that Williamstown PWS is adequately disinfected by 21<sup>st</sup> November 2015.**
- ii. **The boil water notice will remain in place on Williamstown PWS until validation testing of the containerised UV disinfection system has been completed and Irish Water has collected 3 months performance data to verify the effectiveness of the works to the satisfaction of the HSE and EPA.**

## 1. INTRODUCTION

Under the *European Union (Drinking Water) Regulations 2014* the Environmental Protection Agency is the supervisory authority in relation to Irish Water and its role in the provision of public water supplies. A boil water notice was placed on the Williamstown public water supply (PWS) on 30<sup>th</sup> October 2014 due to the failure of the UV disinfection system to operate within its validated range when there is a deterioration in raw water quality. This audit was carried out to assess compliance with the EPA Direction and associated Action Programme to ensure that Williamstown PWS is adequately disinfected at all times.

The source of Williamstown PWS is a karst limestone spring located at the treatment plant. Treatment consists of ozonation, granular activated carbon (GAC) filtration, UV disinfection and chlorination. The plant produces approximately 580 m<sup>3</sup>/day and serves 1,020 people.

Photographs taken by Aoife Loughnane during the audit are attached to this report and are referred to in the text where relevant.

The opening meeting commenced at 15:00 hours at Williamstown water treatment plant. The scope and purpose of the audit were outlined at the opening meeting. The audit process consisted of interviews with staff, review of records and observations made during an inspection of the treatment plant. The audits observations and recommendations are listed in Section 2 and 4 of this report. The following were in attendance during the audit.

<p><b>Representing Irish Water:</b>          Anne Bonner, Drinking Water Compliance Specialist, Irish Water          Shay Walsh, Engineer, Operations &amp; Maintenance, Irish Water          Christina Ryan, Assistant Scientist, Galway County Council          Pat McDermott, General Services Supervisor, Galway County Council          David Donnellan, Technician, Galway County Council          Declan Mannion, Caretaker, Galway County Council</p> <p><b>Representing the Health Service Executive:</b>          Shane Keane, Principal Environmental Health Officer, HSE West          Paul Hickey, Senior Environmental Health Officer, HSE West</p> <p><b>Representing the Environmental Protection Agency:</b>          Aoife Loughnane, Inspector          Darragh Page, Senior Inspector</p>
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## 2. AUDIT OBSERVATIONS

*The audit process is a random sample on a particular day of a facility's operation. Where an observation or recommendation against a particular issue has not been reported, this should not be construed to mean that this issue is fully addressed.*

<p><b>1.</b></p>	<p><b>Interim solution</b></p> <ol style="list-style-type: none"> <li>a. Irish Water has put in place an interim solution (containerised UV disinfection system) to ensure adequate disinfection of Williamstown PWS, until the long-term solution to connect to Lough Mask Regional Water Supply Scheme is implemented.</li> <li>b. The containerised UV disinfection system (photo 1) was delivered to Williamstown WTP on 19<sup>th</sup> October 2015 and commenced operation on 16<sup>th</sup> November 2015.</li> <li>c. The type of UV system is a Wedeco reactor (model type LBX850e Fan) containing 32 lamps and is validated to the following operating criteria:             <ul style="list-style-type: none"> <li>• 50 m<sup>3</sup>/h maximum flow rate;</li> <li>• 40% minimum UVT;</li> <li>• 242 J/m<sup>2</sup> minimum UV dose.</li> </ul> </li> <li>d. During the audit, the UV control panel (photo 2) showed that the unit was operating at 37 m<sup>3</sup>/h, 85.4% UVT and 5010 J/m<sup>2</sup> which is within the validated operating range. This means that the water supply was being adequately disinfected at that time.</li> <li>e. The new UV system will undergo validation testing over a 3 month period commencing in January 2016.</li> </ol>
<p><b>2.</b></p>	<p><b>Long-term Plan</b></p> <ol style="list-style-type: none"> <li>a. Irish Water has identified that the most sustainable solution for treated water supply to Williamstown is to extend the Lough Mask Regional Water Supply Scheme to serve Williamstown via Ballyhaunis and Ballinlough. This will deal with the THM non-compliances in the supply that will not be addressed by the installation of UV treatment.</li> <li>b. Irish Water has confirmed that consultants are progressing the detailed design on the pipe route, pipe sizing and pumping/storage arrangements. Planning has been submitted for the pumping station and the site investigation contract is progressing. The tender process commenced on the project in Q4 of 2015.</li> </ol>

### 3. AUDITORS COMMENTS

A containerised UV disinfection system has been installed at Williamstown WTP and was operating on the day of the audit. While validation testing is still underway, the auditors deemed that the interim solution has been achieved for the most part, and that Irish Water has complied with the EPA Direction and associated Action Programme to ensure that Williamstown PWS is adequately disinfected by 21<sup>st</sup> November 2015.

The boil water notice will remain in place until validation testing of the containerised UV disinfection system has been completed and Irish Water has collected 3 months performance data to verify the effectiveness of the works to the satisfaction of the HSE and EPA.

### 4. RECOMMENDATIONS

1. Irish Water should complete the validation testing of the containerised UV disinfection system and submit 3 months performance data to the HSE and EPA in order to verify the effectiveness of the works.

### FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER

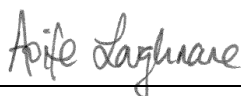
During the audit Irish Water representatives were advised of the audit findings and that action must be taken as a priority by Irish Water to address the issues raised. This report has been reviewed and approved by Darragh Page, Senior Inspector, Drinking Water Team.

Irish Water is recommended to put such measures in place as are necessary to implement the recommendations listed in this report. The actions by Irish Water to address the recommendations taken will be verified by the Agency during any future audits.

The EPA also advises that the findings and recommendations from this audit report should, where relevant, be addressed at all other treatment plants operated and managed by Irish Water.

Please quote the File Reference Numbers DW2008/541 and DW2014/359 in any future correspondence in relation to this Report.

Report prepared by:



Date:

26<sup>th</sup> January 2016

Aoife Loughnane  
Inspector



Photo 1: Containerised UV disinfection system at Williamstown WTP

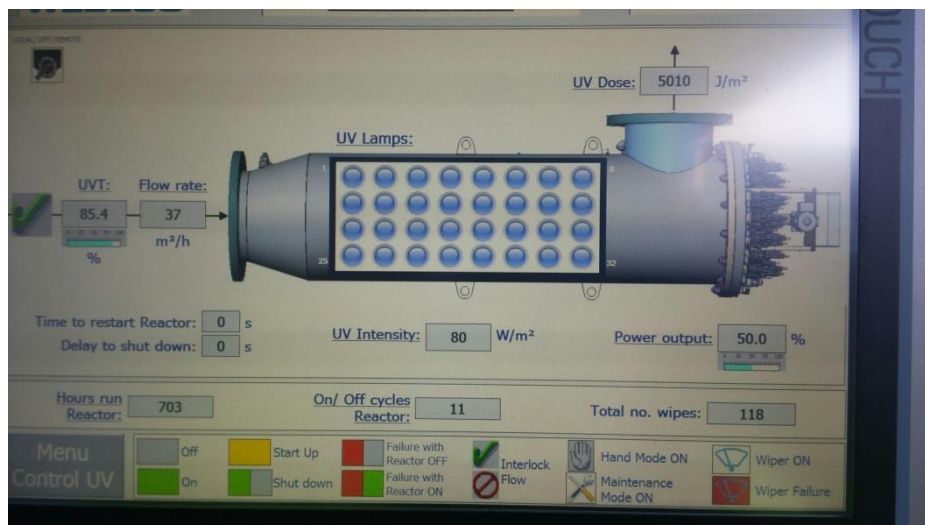


Photo 2: UV control panel showing UVT, flow rate, UVI, UV dose, lamp hours, etc.