



# Drinking Water Audit Report

<b>County:</b>	Galway	<b>Date of Audit:</b>	14 May 2014
<b>Plant(s) visited:</b>	Kilkerrin – Moylough Water Treatment Plant	<b>Date of issue of Audit Report:</b>	23 May 2014
		<b>File Reference:</b>	DW2010/106
		<b>Auditors:</b>	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 EPA Report on <i>The Provision and Quality of Drinking Water in Ireland</i>.</li> <li>• The recommendations in any previous audit reports.</li> </ul>		

## MAIN FINDINGS

- i. **The Water Services Authority (WSA) has not complied with the Direction issued under Regulation 9(2) of the *European Communities (Drinking Water)(No.2) Regulations, 2007* as the installation of a treatment barrier capable of at least 3-log *Cryptosporidium* removal or inactivation was not complete at the time of the audit. This works should have been completed by the 26 September 2012. The barrier must be installed by Irish Water without delay.**
- ii. **Irish Water will need to assess the effectiveness of the filtration system once installed and ensure that documented procedures are in place to manage the operation of the filtration system such that fully treated water enters the distribution network at all times.**

## 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. This audit was carried out to assess the performance of the Water Service Authority in complying with the Direction issued under Regulation 9(2) which required as the installation of a treatment barrier capable of at least 3-log *Cryptosporidium* removal or inactivation. Where the text refers to the Water Service Authority this refers to Irish Water in accordance with Section 7 of the *Water Services (No. 2) Act 2013*.

The Kilkerrin-Moylough water treatment plant serves a population of approx. 1,800. The water source is the Marganure Spring which is influenced by surface water. Treatment at the plant currently consists of chlorination only.

The opening meeting commenced at 12.30 pm at the Kilkerrin Moylough 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.

Representing Irish Water: (\* indicates that person was also present for the closing meeting)

Gerard Greally\* - SLA Manager, Irish Water

Martin Lavelle\* - Senior Engineer, Galway County Council

Diarmuid Croghan\* – Senior Executive Engineer, Galway County Council

John McMyler\* - Senior Executive Engineer, Galway County Council

Adrian Raftery\* – Executive Engineer, Galway County Council

Sean Quinn\* - Technician, Galway County Council

Eunan Canavan\* - Engineer O&M, Irish Water

Representing the Environmental Protection Agency:

Darragh Page – Inspector

## 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.*

<b>1.</b>	<b>Filtration</b> <ul style="list-style-type: none"><li>a. The EPA Direction required the installation of a treatment barrier capable of 3 log removal of <i>Cryptosporidium</i> in the Kilkerrin Moylough PWS by the 26 September 2012. This barrier was not installed at the time of the audit and therefore the Direction has not been complied with.</li><li>b. Galway County Council stated that they had installed Amazon filters (1 µm) but had difficulties with headloss across the filters leading to inadequate flow through the filters. Further investigations had been carried out using 5 µm and 1 µm filters. Additional pumps were installed to address the headloss.</li><li>c. To enable the filters to operate adequately additional building footprint was required and it was stated that plans are in place to extend the building to facilitate the filters and pumps.</li><li>d. Irish Water stated that the contracts are ready to go but have not yet been signed. They stated that the plant will take 8 weeks to construct with a further 2 weeks commissioning. Irish Water estimate that it will take approx. 3 months to complete once the order has been signed. Irish Water and Galway County Council agreed to liaise urgently to progress this issue.</li><li>e. To ensure that the barrier is robust the WSA stated that replacement filter cartridges will be kept by the WSA for deployment at short notice if required.</li></ul>
<b>2.</b>	<b>Monitoring and Sampling Programme for treated water</b> <ul style="list-style-type: none"><li>a. A review of the daily sampling results for 2014 at the water treatment plant was carried out. These results indicate that turbidity levels in excess of 1.0 NTU were recorded on the following dates in 2014:<ul style="list-style-type: none"><li>i. 13 May – 1.41 NTU</li><li>ii. 22 March – 1.51 NTU</li><li>iii. 28 January – 1.14 NTU</li><li>iv. 1 January – 1.5 NTU</li></ul></li><li>b. A review of the daily sampling results for 2014 for chlorine was carried out. The results of the daily free residual chlorine test are not recorded in the log sheet alongside the results from the monitor to confirm that the monitor is recording results correctly.</li></ul>



### **3. AUDITORS COMMENTS**

The WSA was required to install a treatment barrier capable of at least 3-log *Cryptosporidium* removal or inactivation no later than 26 September 2012. This barrier was not in place at the time of the audit and therefore the Direction has not been complied with. During the previous audit on 18 December 2012, the WSA had indicated that this barrier would be in place by 31 January 2013. This was not the case and the barrier has still not been installed. The necessary works to install the barrier should be completed without delay as the WSA is in breach of the Direction.

Once installed Irish Water will need to assess the effectiveness of the treatment barrier and verify that it is operating adequately. Robust documented procedures need to be put in place to manage the filters and ensure that an adequate response is in place when the filters need to be replaced so that no bypassing of the treatment barrier occurs.

### **4. RECOMMENDATIONS**

#### **General**

1. Irish Water should notify the EPA as soon as the installation of the treatment barrier commences and should advise the EPA of the planned completion date of the work and thereafter update the EPA if there is any change to the anticipated timeframes for the completion of the necessary works. The planned completion date should be submitted to the EPA within 7 days of receipt of this audit report.

#### **Filtration**

2. Irish Water should prepare a documented procedure for managing the filters to ensure that when the filters require replacement that there is no risk to the quality of the final water. This procedure should set out when the filters should be replaced and the protocol that is to be followed when replacing the filters to ensure that the treatment barrier is not bypassed at any stage of filter cycle including replacement.

#### **Monitoring and Sampling Programmes for Treated Water**

3. Irish Water should submit a report verifying the effectiveness of the treatment barrier following commissioning. This report should, as a minimum, include the results of two months turbidity monitoring of the treated water from the turbidity monitor and a copy of the procedures as per recommendation 2.
4. Irish Water should record the results of the residual chlorine readings on the chlorine monitor and the results of the manual residual chlorine test carried out daily at the plant and regularly check these results to ensure that the monitor is recording correctly.

**FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER**

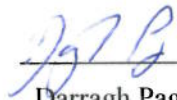
During the audit the Water Services Authority representatives were advised of the audit findings and that action must be taken as a priority by the Water Services Authority to address the issues raised. This report has been reviewed and approved by Mr. Brendan Wall, Manager (Environmental Enforcement).

The Water Services Authority should submit a report to the Agency within one month of the date of this audit report detailing how it has dealt with the issues of concern identified during this audit. In addition a reply in relation to item 1 is required within 7 days. The report should include details on the action taken and planned to address the various recommendations, including timeframe for commencement and completion of any planned work.

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 Number in any future correspondence in relation to this Report.

**Report prepared by:**

  
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Darragh Page

**Date:**

23/5/14

Inspector