

Site Visit Report

Under the European Union (Drinking Water) Regulations 2014 as amended, 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 Irish Water in providing clean and wholesome water to the visited public supply.

The audit process is a sample on a given date of the facility's operation. Where a finding against a particular issue has been reported this should not be construed to mean that this issue is fully addressed.

Water Supply Zone	
Name of Installation	Lorrha/Rathcabbin (Zone 3 - Mix)
Organisation	Irish Water
Scheme Code	2800PUB1024
County	Tipperary
Site Visit Reference No.	SV26093

Report Detail	
Issue Date	10/11/2022
Prepared By	Criona Doyle

Site Visit Detail			
Date Of Inspection	25/10/2022	Announced	Yes
Time In	14:45	Time Out	15:32
EPA Inspector(s)	Criona Doyle		
Additional Visitors			
Company Personnel	Irish Water: Pat Duggan; Colin Cunningham. Tipperary County Council (acting under service level agreement to Irish Water): Edward Treacy; Kevin Molloy.		

> Summary of Key Findings

1. The UV disinfection failure at Riverstown Water Treatment Plant (WTP) on 05/10/22 was appropriately escalated by Tipperary County Council and Irish Water. A boil water notice was placed on a portion of the public water supply on 05/10/22 following consultation with the HSE. The BWN was placed on the first 20 properties served by the Riverstown WTP, due to an issue with inadequate chlorine contact time, whereby adequately disinfected water could not be verified at these properties.
2. On the day of the audit the installation of a new duty and standby UV disinfection system had been completed and the new system was operational.
3. The boil water notice was lifted on 28/10/22 following the completion of the site acceptance testing for the new UV units.

> Introduction

The Lorrha/Rathcabbin (Zone 3 - Mix) Public Water Supply serves a population of 1,271 and supplies 647 m³ /d of water (EDEN figures) to the village of Riverstown and the surrounding area. Approximately 400m³/d of treated water is provided from the Riverstown WTP and 200m³/d from the Lorrha WTP.

Treatment at the Riverstown WTP includes UV and chlorination disinfection. This audit was undertaken at the Riverstown WTP in response to a failure of the UV disinfection stage on 05/10/22.

The BWN was in place on a portion of the public water supply from 05/10/22 to the 28/10/22.

> Supply Zones Areas Inspected

The audit focused on the Irish Water response to the UV disinfection failure and the placing of a boil water notice on the public water supply. The UV and chlorination disinfection stages of the treatment process at Riverstown WTP were also inspected.



1. Incident Management

	Answer
1.1	Was the incident suitably alerted to the plant operators, escalated and managed in order to maintain water quality and protect public health?
	Yes
Comment	
<p>On 05/10/22 a mechanical failure of the duty and standby UV disinfection system occurred at Riverstown WTP. At 09:30 hours the plant automatically shutdown in response to the UV alarms. Tipperary County Council staff attended the site and called a contractor to investigate the issue as the UV disinfection system could not be restarted. The Contractor assessed the UV system on 05/10/22 but it could not be brought back online.</p> <p>Irish Water and Tipperary County Council consulted with the HSE on 05/10/22 and it was agreed to reintroduce the treated water back into supply under a Boil Water Notice. The chlorination stage does not provide adequate contact time for the first 20 properties on the network. The UV disinfection had been installed to address the issue of inadequate chlorine contact time by providing primary disinfection.</p> <p>The automatic plant shutdown linked to the UV unit prevented the discharge of inadequately disinfected water into the network. A BWN was placed on the portion of the PWS affected by inadequate contact time, prior to the water treatment plant being brought back online, in the absence of the UV disinfection stage to protect public health.</p> <p>Tipperary County Council staff hand delivered a copy of the Boil Water Notice (BWN) to the affected households on 05/10/22 prior to water being reintroduced into supply.</p>	



2. Source Protection

	Answer
2.1 Is the abstraction source(s) adequately protected against contamination?	No
Comment	
<p>The boreholes are located in locked chambers which extend above the surrounding ground level. On the day of the audit the borehole chamber covers could not be unlocked. It was not possible to inspect the wellheads to confirm that the boreholes are adequately protected against contamination and meet the requirements of <i>EPA Advice Note No. 14: Borehole Construction and Wellhead Protection</i>.</p>	



3. Disinfection

		Answer
3.1	Are duty and standby chlorine pumps/ UV units in operation?	Yes
Comment		
A new UV disinfection system has been installed in response to the malfunction of the previous UV unit. Duty and standby UV units have been installed to provide primary disinfection. While the duty and standby chlorine dosing pumps provide secondary disinfection.		

		Answer
3.2	Is the UV system suitably validated?	Yes
Comment		
The contractor confirmed that the UV units are validated under USEPA calculated dose method. A copy of the validation certificate was not available at the audit.		
On the day of the audit UV unit No. 1 was in operation with UV dose 47.3mj/cm ² , UVT 94.2% and flow 17.7m ³ /hr.		



4. Management and Control

		Answer
4.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	Yes
Comment		
The protozoal log treatment requirement for the groundwater sources (Borehole No. 1 & Borehole No. 2) at the Riverstown WTP is calculated as no greater than 3. The validated UV disinfection stage satisfies the log treatment requirement.		

Recommendations

Subject	Lorrha Rathcabbin PWS (Riverstown WTP) Audit 25/10/22	Due Date	10/12/2022
Action Text	<p>Recommendations</p> <p>Irish Water is responsible for ensuring a safe and secure supply of drinking water. To address these issues Irish Water should implement the following recommendations without delay.</p> <ol style="list-style-type: none">1. Irish Water should ensure that all borehole linings and seals are maintained in accordance with <i>EPA Advice Note 14: Borehole Construction and Wellhead Protection</i>.2. Irish Water should submit a copy of the validation certificate for the UV disinfection system. <p>Follow-Up Actions required by Irish Water</p> <p>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.</p> <p>This report has been reviewed and approved by Regina Campbell, Drinking Water Team Leader.</p> <p>Irish Water should submit a report to the Agency on or before 10/12/22 detailing how it has dealt with the issues of concern identified during this audit.</p> <p>The report should include details on the action taken and planned to address the various recommendations, including time frame for commencement and completion of any planned work.</p> <p>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.</p> <p>Please quote Compliance Plan DW20220160 in any future correspondence in relation to this Report.</p>		