

Site Visit Report

Under the *European Union (Drinking Water) Regulations 2023*, the Environmental Protection Agency (EPA) is the supervisory authority in relation to Uisce Éireann and its role in the provision of public drinking water supplies. This audit was carried out to assess the performance of Uisce Éireann in providing clean and wholesome water to the public water supply named below.

The audit process is a sample of the performance of a water treatment plant and public water supply on a given date.

Water Supply Zone	
Name of Installation	Carrick-On-Suir (Crottys Lake)
Organisation	Uisce Éireann
Scheme Code	2900PUB0107
County	Tipperary
Site Visit Reference No.	SV30750

Report Detail	
Issue Date	18/12/2024
Prepared By	Michelle Roche

Site Visit Detail			
Date Of Inspection	05/12/2024	Announced	Yes
Time In	10:30	Time Out	11:30
EPA Inspector(s)	Michelle Roche Sean O'Leary		
Additional Visitors			
Company Personnel	Uisce Éireann: Patrick Duggan, Noel Maher. Tipperary County Council: James Whelan, Eoin Lawlor.		

> Summary of Key Findings

1. Primary UV disinfection was not operating as designed from 16/11/2024 to 19/11/2024. During this incident, an open valve allowed water to flow through UV unit 2 (UV2) when the unit was not switched on. Secondary disinfection with sodium hypochlorite failed for a short period of time on 16/11/2024 and 17/11/2024.
2. Primary and secondary disinfection both failed on 24/11/2024 due to a power outage. UV disinfection did not restart once the power returned and was restarted manually at 9:00am on 25/11/2024.
3. Water treatment and plant shutdown alarms did not dial out to operational staff as designed during either incident.

> Introduction

The Carrick On Suir (Crotty's Lake) Public Water Supply serves a population of 2,150 (EDEN figures) from a mountain lake source. Treatment consists of pressure filtration, primary disinfection by UV and secondary disinfection with sodium hypochlorite. The audit focused on two recent primary and secondary disinfection failure incidents at the water treatment plant and the subsequent imposition of a Boil Water Notice on the supply from 25/11/2024, which remains in place.

> Supply Zones Areas Inspected

The audit consisted of interviews with Uisce Éireann and Tipperary County Council operational staff, a review of water quality trends and a walk through of the water treatment plant.



1. Incident Management

1.1

	Answer
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>Primary UV disinfection was not operating correctly from 16/11/2024 to 19/11/2024 and again on 24/11/2024. Secondary disinfection with sodium hypochlorite failed on 16/11/2024, 17/11/2024 and 24/11/2024. All incidents were suitably escalated to Uisce Éireann and the HSE as soon as water treatment plant (WTP) operators became aware of the issues. WTP alarms did not dial-out to operators as designed during the incidents.</p> <p><u>UV Disinfection Failures</u></p> <ol style="list-style-type: none"> 1. It was discovered on 19/11/2024 that inadequately disinfected water had entered the network from 16/11/2024 to 19/11/2024. A change-over valve between UV1 and UV2 had not been fully closed and water had been flowing through UV2 while the unit was switched off. Water flowing through UV2 received no UV disinfection but had entered the distribution network. Water flowing through UV1 had received full UV disinfection. 2. The incident was escalated as appropriate to Uisce Éireann, the HSE and the EPA as soon as the operator was made aware of the issue. 3. On Sunday 24/11/2024 a power outage at the WTP caused the UV and the water treatment plant to shutdown at 21:00pm. No plant shutdown alarm was generated. At 22:00pm flow through the WTP restarted but the UV did not restart. Undisinfected water entered the network from 22:00pm on 24/11/2024 until 9:00am on 25/11/2024 when the operator arrived to site and manually restarted the UV. 4. The UV failure was escalated to Uisce Éireann straight away on 25/11/2024 and subsequently notified to the HSE and EPA. Following consultation with the HSE a Boil Water Notice was placed on the entire supply on 25/11/2024 to protect public health until the reason for the UV failure is investigated and Uisce Éireann confirm that all aspects of the water treatment plant, including alarm dial-outs, are operating as designed. <p><u>Sodium Hypochlorite Disinfection Failures</u></p> <ol style="list-style-type: none"> 1. Chlorination failed from 17:05pm to 18:55pm on 16/11/2024 and again from 12:15pm to 13:05pm on 17/11/2024. A low chlorine alarm did not dial out during these incidents. At the time of the audit these failures had not been fully investigated to determine the cause. 2. Chlorination failed on 24/11/2024 as a result of the power outage at the WTP. Chlorination resumed at 22:00pm when the WTP restarted. The failure was escalated to Uisce Éireann and the HSE on the 25/11/2024 alongside the UV failure that occurred on 24/11/2024. 	



2. Disinfection

2.1

Is there a procedure in place for caretakers and contractors to check and sign-off that all alarms have been correctly re-set on completion of any maintenance work?

Answer

No



3. Management and Control

		Answer
3.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	No
Comment		
The WTP is operating on a default Log 3 protozoal log treatment requirement however the raw water source is a mountainous spring-fed lake where animals have access, therefore the Log requirement could be higher than Log 3.		

		Answer
3.2	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment		
1. At the time of the audit plant shutdown alarms were not being dialed out to operational staff. It was thought that there was an issue with an electronic panel on the PLC at the WTP which was preventing alarms dialing out. Contractors were due on site the day after the audit to investigate the issue.		
2. The WTP appears to be vulnerable to power outages. A number of power outages were discussed during the audit and the issue has also been recorded in the past through Uisce Éireann interactions with the EPA. While it could not be confirmed during the audit, the PLC panel could have been damaged during a power outage.		

		Answer
3.3	Are instrument calibrations within date?	No
Comment		
The calibration sticker on UV2 has been out of date since February 2024. No calibration records were available to view on site to confirm the latest calibration date.		

		Answer
3.4	Is continuous monitoring data accessible?	No
Comment		
Water quality trends are available to view onsite, however there is no remote access to trends.		

Recommendations

Subject	Carrick-on-Suir (Crotty's Lake) Audit Recommendations	Due Date	18/01/2025
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.</p> <ol style="list-style-type: none">1. Ensure all critical process alarms and inhibits in place at the water treatment plant dial-out to operators to allow a timely response to any incident or water quality failure.2. Put in place a procedure to ensure alarm and inhibits are correctly re-installed following maintenance or other work on site.3. Protozoal Barrier: (i) Complete an assessment to verify that the appropriate log treatment requirement is in place for the supply and (ii) provide details of how any remaining log treatment deficit will be addressed.4. Calibrate all plant monitors in accordance with manufacturers instructions, and maintain records of calibrations, servicing and next due dates.5. Provide operational staff with remote access to plant performance trends to assist in the protection of treatment barriers, and ensure they have been adequately trained in the use of SCADA to inform their work. <p>Actions required by Uisce Éireann</p> <p>During the audit, Uisce Éireann representatives were advised of the audit findings and that action must be taken by Uisce Éireann to address the issues raised.</p> <p>Uisce Éireann should submit a report to the EPA on or before 18/01/2025 detailing the actions taken and planned, with timescales, to close out the above recommendations.</p> <p>The EPA advises that the findings and recommendations from this audit report should, where relevant, be addressed at other public water supplies.</p>		