

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	Monroe PWS
Organisation	Uisce Éireann
Scheme Code	2900PUB0151
County	Tipperary
Site Visit Reference No.	SV27702

Report Detail	
Issue Date	29/06/2023
Prepared By	Criona Doyle

Site Visit Detail			
Date Of Inspection	08/06/2023	Announced	Yes
Time In	10:30	Time Out	12:30
EPA Inspector(s)	Criona Doyle Paul Buckley		
Additional Visitors			
Company Personnel	Uisce Éireann: Pat Duggan; Denis McGrath. Tipperary County Council (working in partnership with Uisce Éireann): Brid O'Hehir.		

> Summary of Key Findings

1. The audit found that the UV and chlorination disinfection systems were operating satisfactorily on the day of the audit with alarms and inhibits at suitable levels to protect treated water quality.

> Introduction

The Monroe Public Water Supply (PWS) supplies on average 1,783m³/d and serves a population of 4,369. Raw water is obtained from 3 no. boreholes. Treatment includes UV disinfection and chlorination.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the protozoal barriers in place at the water treatment plant (WTP).

> Supply Zones Areas Inspected

The audit consisted of an inspection of the boreholes, UV disinfection and chlorination treatment stages.



1. Source Protection

	Answer
1.1	Is the abstraction source(s) adequately protected against contamination? Comment <p>Raw water is obtained from 2 no. boreholes located adjacent to the Water Treatment Plant (WTP) and 1 no. borehole located in a separate locked and fenced compound located approximately 500m from the WTP. Investigations (drilling and yield testing) are underway to develop an additional borehole to augment the supply at a third site.</p> <p>The 3 no. boreholes which are currently providing raw water are located in securely fenced compounds. Each borehole is protected by a locked above ground kiosk. The area adjacent to the dip tubes in all 3 no. boreholes was not adequately sealed. Landuse in the immediate vicinity comprises of agricultural land.</p> <p>Uisce Éireann and Tipperary County Council could not confirm when local landowners were written to in relation to their obligations under the <i>European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022</i>.</p>



2. Disinfection

2.1

Is there a suitable monitoring frequency for residual chlorine in the network with records available?

Answer

No

Comment

The monthly residual chlorine monitoring from the network for May indicated monitoring is not taking place several times per week at a number of locations.



3. Protozoal Barriers Audits 2023

	Answer	
3.1	Is there a documented site specific incident response and incident escalation process?	No
Comment		
<p>The Uisce Éireann site specific incident response and incident escalation procedure with site specific contacts and trigger levels was not available at the Monroe WTP. A list of emergency contact numbers was displayed on site.</p> <p>A copy of the documented procedure for response to UV outage was displayed on site.</p> <p>On the day of the audit there was no documented procedure for response to chlorine alarms displayed on site. A copy of the chlorine alarm response procedure was submitted to the EPA on 21/06/2023. Uisce Éireann confirmed the chlorine alarm procedure is now displayed on site.</p>		

	Answer	
3.2	Has UÉ identified the protozoal compliance log treatment requirement for the water treatment plant?	No
Comment		
<p>Uisce Éireann were unable to confirm the protozoal log treatment requirement for the Monroe Public Water Supply. A UV unit is installed onsite to provide primary disinfection. A copy of the validation certification for the UV unit was not available on the day of the audit to confirm the protozoal log treatment removal being provided. Uisce Éireann stated that operational monitoring is due to commence in 2023 to determine the log treatment requirement for the WTP.</p>		

	Answer	
3.3	Is the UV system suitably validated?	No
Comment		
<p>Duty and standby UV units (ATG SX-425-10) are installed. The plate attached to the UV unit indicated the UV units are validated under USEPA methodology (calculated dose) for a maximum flow rate of 180 m³/hr, dose of 42mj/cm² and UVT of 82%. On the day of the audit UV-001 was operating at a dose of 102 mj/cm² and a flow of 75m³/hr.</p> <p>A copy of the UV validation certificate was not available at the audit to confirm the UV system is suitably validated.</p>		

	Answer	
3.4	Are alarms and shutdowns appropriately set on the UV disinfection system?	Yes
Comment		

There is automatic shutdown of the borehole pumps in the event the UV unit drops outside of its validated range. Level 1 alarm setpoints (UV validation critical) trigger automatic plant shutdown for turbidity, UV dose, UVT. Level 2 alarm setpoints (UV validation warning) trigger text alert warning alarms for turbidity, UV dose, UVT and flow.

On the day of the audit the UVT Level 1 alarm setpoint to trigger plant shutdown was not enabled on the HMI. On the 21/06/23 Uisce Éireann confirmed that the UVT shutdown function had been enabled following the audit.

All UV alarms are issued by text alert simultaneously to the Caretaker, General Services Supervisor and Process Control Technician.



4. Site Specific Issues

	Answer	
4.1	Is the information reported by Uisce Éireann on the EPA EDEN portal correct?	No
Comment		
The daily volume and population served listed on EDEN did not match the figures reported at the audit.		

	Answer	
4.2	Are the Monroe PWS treated water storage reservoirs included on the Uisce Éireann Reservoir Cleaning Programme ?	No
Comment		
A storage reservoir for the Monroe PWS was installed 3 to 4 years ago. Uisce Éireann could not confirm if the reservoir was included on the Uisce Éireann Reservoir Cleaning Programme.		

Recommendations

Subject	Monroe PWS - Audit	Due Date	29/07/2023
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. (i) Confirm the protozoal log treatment requirement for the supply and (ii) submit a copy of UV validation certificate.2. Ensure the wellhead on all 3 no. boreholes are fully sealed.3. Confirm the reservoir is on the Uisce Éireann reservoir cleaning programme.4. Liaise with Cork County Council to ensure that local landowners have been written to in relation to their obligations under the <i>European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022</i>.5. Ensure that residual chlorine monitoring is undertaken in the extremities of the network several times a week.6. Update EDEN with the correct supply volume and population served.7. Update the Uisce Éireann Incident Communications Response Guidance Form with site specific information including contacts for escalation and relevant trigger levels to protect critical processes at the treatment plant and display on-site. <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 29/07/2023 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>		