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	Terryglass
Organisation	Uisce Éireann
Scheme Code	2800PUB1006
County	Tipperary
Site Visit Reference No.	SV30565

Report Detail

Issue Date	25/10/2024
Prepared By	Joanne Creedon

Site Visit Detail

Date Of Inspection	24/09/2024	**Announced**	Yes
Time In	11:55	**Time Out**	12:07
EPA Inspector(s) **Additional Visitors**	Joanne Creedon		
Company Personnel	Uisce Éireann: Denis McGrath, Melissa Devane. Tipperary County Council (working in partnership with Uisce Éireann): Shane Boland, Collum Grace, Kevin Molloy.		

Summary of Key Findings

1. Disinfection consists of chlorination and ultraviolet (UV).

2. The Crossanagh water treatment plant is the main supply for the Terryglass Public Water Supply with the Village Borehole water treatment plant supplementing when the demand increases. This audit is an inspection of the the Village Borehole water treatment plant.

3. A domestic UV unit is in place at the Village Borehole water treatment plant. The UV disinfection system should be validated to an appropriate international validation standard and a copy of the validation certificate should be maintained.

Introduction

The Terryglass Public Water Supply (PWS) produces approximately 100m3/d of water serving a population of 100 (EDEN 2023). This audit is an inspection of the Village Borehole water treatment plant and is focused on the disinfection system.

Supply Zones Areas Inspected

This audit assessed the chlorination and UV disinfection system at the Village Borehole water treatment plant

1. Disinfection Audits 2024

		Answer
1.1	Is chlorination used for primary disinfection?	Yes

		Answer
1.2	Did Uisce Éireann confirm the type of chlorine disinfectant in use?	Yes

		Answer
1.3	Are there duty and standby chlorine dosing pumps in place?	Yes

		Answer
1.4	Is there automatic switchover in the event of failure of one of the chlorine dosing pumps?	Yes

		Answer
1.5	Is the chlorine dosing rate flow proportional?	No

		Answer
1.6	Is the chlorine dosing rate fixed?	Yes
	Comment	
	Borehole	

		Answer
1.7	Is there a continuous residual chlorine monitor, with alarm, to verify chlorine dosing is taking place at the target level?	Yes

		Answer
1.8	Is there a continuous residual chlorine monitor, with alarm, at a suitable sample location after contact time has been completed?	Yes

		Answer
1.9	Can data trends from the online residual monitor be viewed on site?	No

Comment
No HMI onsite - Trends monitored onsite using graph.

		Answer
1.10	Are there low and high chlorine alarm settings on each chlorine monitor?	Yes

		Answer
1.11	Is there a documented alarm response procedure for responding to chlorine alarms?	Yes

		Answer
1.12	Have staff been trained on the chlorine alarm response procedure?	Yes

		Answer
1.13	Are chlorine alarms dialled out via a cascade system to allow a timely response by plant operators?	Yes

		Answer
1.14	Is there automatic shutdown of the supply in the event of the chlorine level dropping below the low level or rising above the high chlorine alarm setting?	Yes

		Answer
1.15	Are service due / monitoring instrument calibration dates for the chlorine monitors within date?	Yes

		Answer
1.16	Is the site specific target contact time being achieved?	No

		Answer
1.17	Is the minimum effective contact time of 15 mg. min/l being achieved?	Yes

	Answer

1.18	Is the residual chlorine level ≥ 0.1 mg/l at the extremity of the distribution network?	Yes

		Answer
1.19	Is monitoring of network residual chlorine undertaken several times per week?	Yes

		Answer
1.20	Is UV treatment used for primary disinfection?	No
	Comment	
	Secondary	

		Answer
1.21	Are there duty and standby UV units in operation?	No
	Comment	
	One UV unit - domestic UV unit.	

		Answer
1.22	Is there automatic changeover between the duty and standby UV units?	No

		Answer
1.23	Is there automatic shut-off of the supply in the event of UV units failing or operating outside of their validated range?	No

		Answer
1.24	Is there continuous monitoring of the UV units to verify operation within validation range at all times?	No

		Answer
1.25	Can data trends from the online UV monitor(s) be viewed on-site?	No
	Comment	

Inspected every day. No trends available onsite.

		Answer
1.26	Is there a documented alarm response procedure for responding to UV alarms?	Yes

		Answer
1.27	Have staff been trained on the UV alarm response procedure?	Yes

		Answer
1.28	Are UV alarms dialled out via a cascade system to allow a timely response by plant operators?	No

		Answer
1.29	Are service due / monitoring instrument calibration dates for the UV units within date?	Yes

		Answer
1.30	Is the UV disinfection system validated to an appropriate international standard ?	No

Comment
Domestic unit, not certified.

		Answer
1.31	Did UÉ confirm that the UV disinfection system is operating within the validated range?	No

Recommendations

Subject	Terryglass PWS (Village BH)- Disinfection Audit	**Due Date**	22/11/2024
Action Text	**Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.** 1. Ensure that chlorine dosing is flow proportional or is linked to the residual chlorine monitor. Where the dosing pump is fixed Uisce Éireann should replace the pump(s) with flow proportional pumps or pumps capable of dosing based on the residual chlorine monitor. 2. Ensure that residual chlorine trends are available and accessible on site to plant operators via SCADA / HMI. 3. Ensure that the target contact time is being achieved. 4. Ensure that there are duty and standby UV disinfection units with automatic changeover between the duty and standby UV or plant shutdown in the event of failure of one of the UV disinfection units. 5. Ensure there is automatic plant shutdown in the event the UV units drop outside of the validated range. 6. Install a continuous (UVI / UVT / flow) monitor at the point of disinfection which is alarmed and linked to a recording device to ensure that any change in the quality of water outside the validated range for the UV treatment system or a failure of the UV disinfection system is immediately detected and responded to. 7. Ensure that the UV system operates within its validated range at all times and that the performance of the UV system can be verified at all times by providing access to trended operational data. 8. Ensure that UV alarms are dialled out to a number of staff to allow a timely response in the event of staff unavailability. 9. Ensure that the UV disinfection system is validated to an appropriate international validation standard and that a copy of the validation certificate is maintained. 10. Ensure that the UV disinfection system operates within its validated range at all times. **Actions required by Uisce Éireann** 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. Uisce Éireann should submit a report to the EPA on or before 22/11/2024 detailing the actions taken and planned, with timescales, to close out the above recommendations. The EPA advises that the findings and recommendations from this audit report should, where relevant, be addressed at other public water supplies.		