

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	Kilmacthomas
Organisation	Uisce Éireann
Scheme Code	3100PUB1064
County	Waterford
Site Visit Reference No.	SV27942

Report Detail	
Issue Date	18/07/2023
Prepared By	Paul Buckley

Site Visit Detail			
Date Of Inspection	04/07/2023	Announced	Yes
Time In	11:00	Time Out	11:30
EPA Inspector(s)	Joanne Creedon Paul Buckley David O' Malley		
Additional Visitors			
Company Personnel	Uisce Eireann: D. McGrath, S. Clifford Waterford City and County Council (working in partnership with Uisce Éireann): D. Hourigan, D. Whelan, J. Power.		

> Summary of Key Findings

(1) Disinfection consists of chlorination and ultraviolet (UV) treatment. The audit found that the disinfection system was operating satisfactorily during the inspection.

(2) The UV system consists of one UV disinfection unit only. Uisce Éireann should ensure that there are duty and standby UV disinfection units with automatic changeover or plant shutdown in the event of failure of one of the UV disinfection units.

> Introduction

The Kilmacthomas Water Treatment Plant (WTP) serves a population of 361 (EDEN figures). The audit focused on the disinfection system at the Kilmacthomas WTP.

> Supply Zones Areas Inspected

This audit assessed the chlorination and ultraviolet (UV) disinfection system at Kilmacthomas WTP.



1. Disinfection Audits 2023

		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?	Yes
		Answer
1.6	Is there a continuous residual chlorine monitor, with alarm, to verify chlorine dosing is taking place at the target level?	Yes
		Answer
1.7	Is there a continuous residual chlorine monitor, with alarm, at a suitable sample location after contact time has been completed?	Yes
		Answer
1.8	Can data trends from the online residual monitor be viewed on site?	Yes
		Answer
1.9	Are there low and high chlorine alarm settings on each chlorine monitor?	Yes
		Answer
1.10	Is there a documented alarm response procedure for responding to chlorine alarms?	Yes

		Answer
1.11	Have staff been trained on the chlorine alarm response procedure?	Yes
		Answer
1.12	Are chlorine alarms dialled out via a cascade system to allow a timely response by plant operators?	Yes
		Answer
1.13	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
1.14	Are service due / monitoring instrument calibration dates for the chlorine monitors within date?	Yes
		Answer
1.15	Is the site specific target contact time being achieved?	Yes
		Answer
1.16	Is the residual chlorine level ≥ 0.1 mg/l at the extremity of the distribution network?	Yes
		Answer
1.17	Is monitoring of network residual chlorine undertaken several times per week?	Yes
		Answer
1.18	Is UV treatment used for primary disinfection?	No
	Comment	
	Secondary Disinfection	
		Answer
1.19	Are there duty and standby UV units in operation?	No

Comment
1 unit only

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

	Answer
1.21 Is there automatic shut-off of the supply in the event of UV units failing or operating outside of their validated range?	Yes

	Answer
1.22 Is there continuous monitoring of the UV units to verify operation within validation range at all times?	Yes

	Answer
1.23 Can data trends from the online UV monitor(s) be viewed on-site?	Yes

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

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

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

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

		Answer
1.28	Is the UV disinfection system validated to an appropriate international standard ?	Yes

		Answer
1.29	Did UÉ confirm that the UV disinfection system is operating within the validated range?	Yes

Recommendations

Subject	Kilmacthomas WTP - Disinfection Audit	Due Date	18/08/2023
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendation(s) without delay.</p> <ol style="list-style-type: none">1. Uisce Eireann should ensure that there are duty and standby UV disinfection units with automatic changeover or plant shutdown in the event of failure of one of the UV disinfection units. <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 18/08/2023 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>		