

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	Clonbur PWS
Organisation	Uisce Éireann
Scheme Code	1200PUB1013
County	Galway
Site Visit Reference No.	SV29872

Report Detail	
Issue Date	04/04/2024
Prepared By	Maria O'Connell

Site Visit Detail			
Date Of Inspection	12/02/2024	Announced	Yes
Time In	11:00	Time Out	13:10
EPA Inspector(s)	Maria O'Connell		
Additional Visitors			
Company Personnel	Uisce Eireann: Vinny McGrath, Patrick Navin, Fintan Joyce, Cathal Furey. Representing Glanua (working under contract to Uisce Eireann): Colin Joyce and Cillin Dunne.		

> Summary of Key Findings

1. A validation certificate for the UV disinfection unit (WEDECO Specktron 150) is not available. The single UV unit onsite has alarm and inhibit settings in place as per the manufacturers plate. The onsite reservoir has a storage capacity of 18 hours.
2. There are no alarm settings on individual filters to alert operational staff of deteriorating water quality. The inhibit set points for turbidity listed on the preaudit information for filters 1 and 2 were not displayed on the inhibit list on the PLC.
3. Operational staff outlined that screens at the abstraction point required cleaning due to recent weather events.

> Introduction

Clonbur water treatment plant is operated under contract by Glanua and serves a population of 1387. The raw water for the plant is abstracted from Lough Coolin (approximately 500m from the plant). The current abstraction rate is 68.4m³/hr with raw water subject to limited change. The water treatment plant produces on average 1200-1400m³ of treated water per day. A source and sanitary survey was completed in 2021 and a 3 log treatment requirement was assigned. Treatment consists of pH correction, coagulation, filtration followed by disinfection and fluoridation. There is one reservoir on site (1000m³) which has 18 hours storage. The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water focusing on the protozoal barriers in place at the treatment plant.

> Supply Zones Areas Inspected

The audit included a site tour of treatment processes at Clonbur WTP.



1. Protozoal Barriers Audits 2024

		Answer
1.1	Are the filters designed and managed in accordance with EPA guidance?	No
	Comment	
	<p>1. There are two modular filtration units in operation on site which were installed in 2011. The most recent media replacement took place in 2021. The type of media used consists of anthracite and sand.</p> <p>2. Filter media depth was reported to be 450mm anthracite and 450mm sand prior to the audit however on site the depth was reported as 450mm anthracite and 650mm sand. There are no filter depth gauges onsite and no depth measurement records were available at the time of the audit. Operational staff advised that checks are undertaken on depth levels every 3 months.</p> <p>3. Back washes are triggered on head loss and turbidity levels. A backwash set point is also available on time but this function was not enabled at the time of the audit.</p> <p>4. Assessment of turbidity trends for raw water, individual filter water and final water indicated very good turbidity levels at this plant.</p>	
		Answer
1.2	Is the UV system suitably validated?	No
	Comment	
	<p>1. Operational staff outlined that a validation certificate for the UV disinfection unit is not available.</p>	
		Answer
1.3	Are there duty and standby UV units in operation?	No
	Comment	
	<p>1. This site contains a duty UV unit with an automatic shutdown function. There is no standby unit onsite.</p> <p>2. The onsite reservoir has 18 hours storage.</p>	
		Answer
1.4	Are service due/ instrument calibration for the UV units within date?	Yes
	Comment	
	<p>1. Operational staff outlined that UV sensor calibration is undertaken in house. Records reviewed only state calibrations are complete with no further detail recorded.</p>	

		Answer
1.5	Are alarms and shutdowns on each filter, on the combined filtered water and final water in accordance with the EPA Filtration Manual?	No
	Comment	
	<p>1. Turbidity alarms are in place for raw water at 5.0 NTU and treated (final) water at 0.5 NTU. There is a shutdown in place for treated water at a set point of 0.8NTU with a time delay of 300 seconds.</p> <p>2. There are no alarms on individual filters. The shutdown set points for turbidity on filters 1 and 2 provided on the preaudit information were not displayed on the inhibit list on the PLC.</p>	

		Answer
1.6	Are alarms and shutdowns appropriately set on the UV disinfection system?	No
	Comment	
	<p>1. The manufacturer's plate on the UV unit listed control parameters. The alarm and shutdown setpoints for the UV unit were in accordance with the detail thereon however a validation certificate for the unit was not available.</p>	

		Answer
1.7	Was the chlorine contact time calculation correct?	No
	Comment	
	<p>1. The format of the chlorine contact time calculation submitted with pre audit information did not indicate adjustments for pH, temperature and turbidity.</p>	

Recommendations

Subject	Clonbur Audit 2024	Due Date	06/05/2024
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. UV Treatment: (i) provide the validation certificate for the UV unit (ii) submit two months of UV trend data (as per validation method used) to verify that the UV unit is operating within its validated operating range; (iii) confirm the alarm and inhibit setpoints are based on validated range (iv) provide the rationale for the duty only UV system at Clonbur WTP.2. Filtration: Ensure that filtration operations are undertaken in accordance with the <i>EPA Water Treatment Manual: Filtration by</i>: (i) ensuring alarms and inhibits are provided on individual filters (ii) installing a means of measuring filter media depth (iii) developing and maintaining a filter log as per the EPA Water Treatment Manual: Filtration.3. Provide the chlorine contact time calculation for the supply as per Uisce Eireann calculation template detailing adjustments for temperature, turbidity and pH.4. Ensure that where calibration and servicing of critical treatment and monitoring equipment is undertaken in house that detailed records are maintained to demonstrate action undertaken.5. Confirm that the screens at the abstraction point have been cleaned. <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 06/05/2024 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>		