

# 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	Anglesboro PWS
Organisation	Uisce Éireann
Scheme Code	1900PUB1003
County	Limerick
Site Visit Reference No.	SV30653

Report Detail	
Issue Date	13/12/2024
Prepared By	Orla Harrington

Site Visit Detail			
Date Of Inspection	13/11/2024	Announced	Yes
Time In	12:15	Time Out	12:50
EPA Inspector(s)	Orla Harrington		
Additional Visitors			
Company Personnel	Uisce Éireann: Susan Cook, Sharon O'Dwyer, Ted Ahern.  Limerick City and County Council (working in partnership with Uisce Éireann): Neal Boyle, Willie Hurley, John Roche.		

## > Summary of Key Findings

1. The audit found that Anglesboro water treatment plant was performing well and producing safe drinking water on the basis of primary disinfection being achieved by chlorination at the plant. Disinfection is also provided by UV treatment to inactivate *Cryptosporidium*. However, the audit found that there is no automatic shutdown on the UV unit in the event of the failure of the unit to operate within its validated range.
2. There are no automatic shutdowns linked to low and high chlorine levels in the final water in order to prevent inadequately treated water entering the supply.
3. Uisce Éireann were unable to confirm the protozoal log treatment requirement for the Anglesboro public water supply.

## > Introduction

The Anglesboro public water supply supplies on average 26 m<sup>3</sup>/day and serves a population of 34. This scheme is supplied by a single borehole and has chlorination (primary) and on-site UV treatment (secondary) for the inactivation of *Cryptosporidium* prior to supply into the network.

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.

## > Supply Zones Areas Inspected

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



## 1. Source Protection

1.1

Is the abstraction source(s) adequately protected against contamination?

**Answer**

No

**Comment**

1. The borehole is not sealed or capped in accordance with EPA Drinking Water Advice Note No. 14: Borehole Construction and Wellhead Protection.



## 2. Protozoal Barriers Audits 2024

2.1

Has UÉ identified the protozoal compliance log treatment requirement for the water treatment plant?

Answer

No

**Comment**

1. Uisce Éireann said that a source and sanitary survey has not been carried out for the groundwater source to determine the protozoal log treatment requirement.
2. A default log requirement of 3 is being applied to the supply until the source and sanitary survey is complete.

2.2

Is the UV system suitably validated?

Answer

Yes

**Comment**

1. A single VISAGES T-60 UV reactor validated to ONORM standard is in place to provide a barrier to *Cryptosporidium*. There is no standby UV unit. Uisce Éireann provided a validation certificate subsequent to the audit, confirming that the UV unit is validated to operate within a specified range.
2. The validated range of the UV unit is > 15.7 W/m<sup>2</sup> UV intensity for flows up to 1.2 m<sup>3</sup>/hr and > 83.3% UV transmissivity. At the time of the audit, the inlet flow was 0.81 m<sup>3</sup>/hr, UVI was reading 28.3 W/m<sup>2</sup> and UV dose 27.66 mJ/cm<sup>2</sup> which demonstrates that the plant was being operated within its validated range. There is no UVT monitor at the plant.
3. The trends for the UV unit are unavailable at the plant and only available to view on the countywide SCADA. A copy of one month of trend data for UV dose was provided by Uisce Éireann in advance of the audit and demonstrated that the UV unit was operating effectively during that time.

2.3

Are alarms and shutdowns appropriately set on the UV disinfection system?

Answer

No

**Comment**

1. The minimum validate UVI is 15.7 W/m<sup>2</sup> and the plant is alarmed at 22 W/m<sup>2</sup>. Uisce Éireann were unable to confirm what validated shutdowns are in place for the UV unit to prevent entry of inadequately treated water into the supply.
2. There is a continuous residual monitor on the mains which provides validation of chlorine contact time. While there are appropriate warning alarms in place, there are no automatic plant shutdown setpoints in place based on the output of this residual chlorine monitor to prevent inadequately treated water entering the supply.

## Recommendations

Subject	Anglesboro PWS - Audit Report	Due Date	13/01/2025
<b>Action Text</b>	<p><b>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay:</b></p> <ol style="list-style-type: none"> <li>1. Ensure there is automatic shutdown of the UV disinfection system if the operating conditions deviate outside the validated range.</li> <li>2. Install a continuous UVT monitor on the UV disinfection system to align with the design criteria specified in the validation certification provided.</li> <li>3. Ensure that the appropriate high and low plant shutdown setpoints are in place on verified chlorine residuals after contact time.</li> <li>4. Confirm the protozoal log treatment requirement for the raw water source and provide details of how any protozoal log treatment deficit, if identified, will be addressed.</li> <li>5. Ensure the borehole is adequately capped. Uisce Éireann should have regard to EPA Advice Note No. 14: Borehole Construction and Wellhead Protection when carrying out these works.</li> </ol> <p><b>Actions required by Uisce Éireann</b></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 13/01/2025 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>		