

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	Ardfinnan Regional
Organisation	Uisce Éireann
Scheme Code	2900PUB0102
County	Tipperary
Site Visit Reference No.	SV33308

Report Detail

Issue Date	01/12/2025
Prepared By	Michelle Roche

Site Visit Detail

Date Of Inspection	03/11/2025	Announced	Yes
Time In	10:10	Time Out	11:40
EPA Inspector(s)	Michelle Roche		
Additional Visitors			
Company Personnel	Uisce Éireann: Denis McGrath, Eamonn O'Gorman, Brid Whelan, Cyril Ryan, Michael Okrajeh, Darren Cleary.		

➤ Summary of Key Findings

1. A Boil Water Notice was issued for the full population of Ardfinnan public water supply on 04/09/2025. The current water treatment infrastructure in place cannot adequately deal with raw water conditions and maintain filter turbidities below 0.3 NTU as outlined in the *EPA Water Treatment Manual: Filtration*.
2. Upgrades to the coagulation and dissolved air floatation and filtration process are ongoing at the water treatment plant with an estimated completion date of Q1 2026.
3. It is anticipated that the Boil Water Notice will remain in place until upgrade works are complete.

➤ Introduction

Ardfinnan public water supply serves a population of 11,477 from Ardfinnan Water Treatment Plant (WTP) which produces approximately 300m³ of treated drinking water per hour. The source of the supply is two mountain streams that blend in the raw water inlet to the WTP. Treatment includes pH adjustment, coagulation, dissolved air floatation, filtration, final water pH correction and chlorination.

The audit was undertaken to investigate the Boil Water Notice that has been in place on the supply since 04/09/2025, affecting 11,477 people, and gather details on the treatment upgrade works that are ongoing at the WTP.

➤ Supply Zones Areas Inspected

The audit consisted of interviews with Uisce Éireann staff, a review of water quality trends and a walk through of the Ardfinnan Water Treatment Plant.



1. Coagulation Flocculation and Clarification (CFC) Stage

Answer

1.1	Is the CFC process optimised to respond to changes in raw water quality?	No
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Comment

1. CFC upgrade works are ongoing with an estimated completion date of Q1 2026. The primary outstanding upgrade related to the CFC process is to commission a static mixer to better control the introduction and mixing of coagulation chemicals.
2. Upgrades have already taken place whereby chemical dosing pumps have been upgraded and all coagulation chemicals (soda ash, aluminum sulphate and polyelectrolyte) are automatically dosed based on programmed raw water colour bands. Dosing bands have been generated from jar testing at the WTP.



2. Filtration

Answer

2.1

Does monitoring indicate that the filters are operating effectively?

No

Comment

1. Filtration at Ardfinnan WTP takes place in 3 Dissolved Air Flotation Filtration units (DAFF) at the WTP. DAFF upgrade works are ongoing with an estimated completion date of Q1 2026.
2. The WTP cannot consistently meet the requirement for individual filter turbidites to be below 0.3 NTU, as outlined in the EPA *Water Treatment Manual: Filtration*.
3. Since 04/09/2025 the WTP has experienced intermittent instances of individual filter turbidities above 0.3 NTU and this continues to be the case as evidenced by individual filter turbidity trend data viewed onsite.
4. Filter turbidities above 0.3 NTU indicate that the treatment process is not working effectively to remove protozoa such as *Cryptosporidium* and there is the potential for *Cryptosporidium* oocysts to make their way through to the final water. This presents a public health risk to consumers. The Boil Water Notice put in place on 04/09/2025 is to protect consumers from the potential public health risk while WTP upgrade works are completed.



3. Disinfection

Answer

3.1	Is the disinfection system verified using monitors and alarms?	Yes
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Comment

1. Disinfection treatment with sodium hypochlorite has been upgraded in the past 2 months.
2. Disinfection contact time is verified with an online chlorine residual monitor on the outlet of the onsite reservoir. The alarm and shutdown setpoint is 1.1 mg/l, well above the 0.5 mg/l required on the site specific contact time calculation sheet.



4. Management and Control

4.1

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

Answer

No

Comment

1. A protozoal log treatment requirement has not been determined for the WTP. A default log treatment requirement of 3 log has been assigned.
2. A raw water monitoring programme to assist with identifying a log treatment requirement commenced in October 2025 and a source and sanitary survey will follow.
3. Monthly *Cryptosporidium* monitoring is carried out on the final water at the WTP. A *Cryptosporidium* detection of 0.005 oocysts/1000L was detected on 08/09/2025.

4.2

Are instrument calibrations within date?

Answer

No

Comment

1. Calibration stickers were missing for some of the newly installed pieces of equipment such as soda ash and aluminum sulphate dosing pumps and online chlorine residual monitors.
2. This equipment was installed approximately 2 months ago, therefore it is unlikely that calibration is yet required, however it is important that a calibration schedule is documented for this equipment as soon as possible to avoid calibration dates being missed.

Recommendations

Subject	Ardfinnan Audit Recommendations	Due Date	01/01/2026
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. Complete the Coagulation, Flocculation, Clarification (CFC) and Dissolved Air Flotation and Filtration (DAFF) upgrades in line with the expected completion date of Q1, 2026 to ensure Ardfinnan Water Treatment Plant can maintain individual filter turbidities below 0.3 NTU as outlined in the EPA <i>Water Quality Manual: Filtration</i>.2. Consult with the HSE on the criteria for lifting the Boil Water Notice once CFC and DAFF upgrade works are commissioned and verified.3. Identify the protozoal log treatment requirement for Ardfinnan water treatment plant and ensure the treatment is appropriate to meet the requirement.4. Ensure calibration stickers are in place on all new equipment as soon as possible after installation and ensure calibration schedules and associated stickers are kept up-to-date on all new and existing equipment. <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 01/01/2026 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>		