

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	Cavanhill
Organisation	Uisce Éireann
Scheme Code	2100PUB1018
County	Louth
Site Visit Reference No.	SV32556

Report Detail	
Issue Date	09/05/2025
Prepared By	Ruth Barrington

Site Visit Detail			
Date Of Inspection	10/04/2025	Announced	Yes
Time In	11:00	Time Out	13:30
EPA Inspector(s)	Ruth Barrington Derval Devaney		
Additional Visitors			
Company Personnel	Uisce Éireann: Joseph Moran, Maria Lloyd Louth County Council (working in partnership with Uisce Éireann): Andrew White, Patrick Callan, Barry McKenna, Martin McEntee, Andrew Tuite		

> Summary of Key Findings

1. Uisce Éireann has responded to the EPA's Regulation 27(1) Direction, providing an action programme with timescales to deliver THM compliance. This programme also considers manganese compliance under the Audit Observations RAL Category. Uisce Éireann have provided a completion date of June 2032.
2. Uisce Éireann have trialed and carried out options to improve THM and manganese compliance, and are at the design stage for the RAL project. Programmes of uni-directional flushing have been carried out in the network and a further programme is being carried in 2025.

> Introduction

Cavanhill PWS serves a population of over 46,000 in Dundalk and the surrounding area. Water is abstracted from the River Fane and treated at the Cavanhill water treatment plant (WTP) through processes including potassium permanganate dosing (for manganese control), coagulation, flocculation and clarification (CFC) followed by filtration and disinfection using a UV system and chlorination.

Cavanhill PWS is on the EPA's Remedial Action List (RAL) due to THM and the significance of previous audit observations in relation to manganese exceedances in the supply. This audit was carried out to assess Uisce Éireann's progress under the RAL and its response to a Direction issued by the EPA on 19/11/2024, requiring an Action Programme with timelines for achieving THM compliance.

> Supply Zones Areas Inspected

Site areas and WTP records relevant to THM and manganese mitigation were inspected during the audit, including the raw water balance tank, pilot manganese removal plant, CFC tanks and channels and rapid gravity filters.



1. Coagulation Flocculation and Clarification (CFC) Stage

1.1

Were the CFC tanks, channels and weirs observed to be clean, level and well maintained during the audit?

Answer

No

Comment

1. A build up of algae was noted by the auditors in the settled water clarifier channels.



2. Management and Control

2.1

Are suitable alarm settings in place to alert operators to deteriorating water quality and/or the failure of a critical treatment process?

Answer

No

Comment

1. Final water pH high and low settings with WTP shutdown were reported by Uisce Éireann as having been established following the previous EPA audit on 25/07/2023.
2. The setpoints and shutdown status of the high and low pH were available within a print out list of WTP alarms and inhibits, but staff could not locate these settings within SCADA to verify them.

2.2

Are online monitors operational?

Answer

Yes

Comment

1. The turbidity reading on Filter 6 was higher than that of the other filters, although it was less than 0.3 NTU indicating appropriate filter performance. Staff outlined that there is a known issue with the sample bulb at this monitoring point, which requires additional maintenance work to ensure a representative sample result.
2. The data from the recirculation line turbidity monitor is not trended in SCADA, meaning that any gradual deterioration of quality in this stream can not be easily identified and acted on.

2.3

Is there appropriate oversight of plant performance?

Answer

No

Comment

1. Uisce Éireann confirmed that current levels of THM monitoring in the Cavanhill PWS comprise compliance monitoring at frequencies required by the *European Union (Drinking Water) Regulations 2023*, and some additional network THM sampling. Uisce Éireann's oversight of the success of steps taken within the RAL Action Programme is limited at present.
2. Operational monitoring to assess progress towards minimising THM formation, including by previous WTP process optimisation, has not yet been established by Uisce Éireann. Such monitoring within the WTP processes and of final treated water, would build up a picture of the changes in THM formation and formation indicators linked to seasonality and the success of steps taken to optimise processes.
3. In contrast, the performance of the measures to deal with manganese compliance within the WTP is assessed daily with operational samples taken throughout the treatment process.

2.4

Have the recommendations from the previous EPA audit been satisfactorily addressed?

Answer

Yes

Comment

1. Since the previous EPA audit on 25/07/2023, the Cavanhill PWS was added to the RAL for two categories, THM and EPA audit observations (linked to manganese exceedances). The EPA issued a Regulation 27(1) Direction to Uisce Éireann on 19/11/2024 requiring the submission of a RAL Action Programme including timescales, which was provided to the EPA on 04/03/2025.
2. Uisce Éireann's progress towards completing the RAL Action Programme will currently be tracked under the six-monthly RAL updates and the current audit recommendations, while the previous audit report is considered as closed out.

Recommendations

Subject	Cavanhill Audit 10/04/2025	Due Date	10/06/2025
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. Continue to provide the six-monthly updates on progress to address the RAL categories of THM and audit observations (manganese) in the Cavanhill PWS. These updates should include key design decisions made during the project lifespan. 2. Increase the frequency and scope of operational THM monitoring at separate process stages and in final treated water, to verify the progress of steps within the RAL Action Programme. Have regard to EPA Advice Note 4 "<i>Disinfection By-Products in Drinking Water</i>", in developing this monitoring programme. 3. Confirm suitable final water pH shutdowns are active at the Cavanhill WTP and are displayed in SCADA. 4. Trend the data from the turbidity monitor on the recirculation stream so it is available in SCADA and can be used to identify and control any deteriorating quality of this stream. 5. Carry out works at the turbidity sample bulb at Filter 6 to provide representative samples. 6. Clean the algae from the settled water clarifier channels. <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 by the above due date 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>		