

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	Barrow Supply
Organisation	Uisce Éireann
Scheme Code	1400PUB1060
County	Kildare
Site Visit Reference No.	SV32533

Report Detail	
Issue Date	10/06/2025
Prepared By	Lisa Noone

Site Visit Detail			
Date Of Inspection	21/05/2025	Announced	Yes
Time In	10:30	Time Out	12:40
EPA Inspector(s)	Lisa Noone		
Additional Visitors			
Company Personnel	Uisce Éireann: Edward Haythornthwaite, Jessica Evans, Linda Doran Veolia (operating under a DBO contract to Uisce Éireann): Mark Robinson, Keith McEvoy, Charlotte O'Hare.		

> Summary of Key Findings

1. An upgrade of the Srowland Water Treatment Plant is proposed under the RAL Action Programme with an expected completion date of Q4 2026, which Uisce Éireann state is on-track.
2. There have been recurring exceedances of the manganese parametric value in the final water of Srowland Water Treatment Plant. Different treatment options including a potassium permanganate dosing system to aid manganese removal are under consideration by Uisce Éireann, with a proposed completion date of Q4 2026.

> Introduction

Srowland Water Treatment Plant (WTP) is operated by Veolia under a design, build and operate (DBO) contract to Uisce Éireann. The plant has been in production since 2013 and treatment consists of raw water storage, pH correction, coagulation, flocculation, and clarification followed by rapid gravity filtration, disinfection (UV and chlorination) and fluoridation. The plant produces approximately 18ML/day, serving a population of 81,613 people. Srowland WTP supplies water to Barrow Regional Public Water Supply (PWS) and partially supplies Barrow/Poulaphouca Blend PWS, Rathangan PWS and Monasterevin PWS.

The Barrow Public Water Supply has been on the EPA's Remedial Action List (RAL) since Quarter 2 2022 under the RAL category 'EPA Audit Observation - Treatment and Management Issues', reflecting the treatment deficit under which the plant operates. An upgrade of the Water Treatment Plant is proposed under the RAL Action Programme with an expected completion date of Q4 2026.

The audit was undertaken to assess Uisce Éireann's progress with the RAL programme of works and to assess performance in producing clean and wholesome water.

> Supply Zones Areas Inspected

The raw water source at the Barrow River, along with all treatment processes on site were inspected as part of the audit.



1. Coagulation Flocculation and Clarification (CFC) Stage

1.1

Were the CFC processes visually observed to be operating appropriately during the audit?

Answer

No

Comment

1. Floc carryover from the clarifiers was observed in rapid gravity filter 2.



2. Filtration

2.1

Was there visual indication that the filters were operating effectively?

Answer

No

Comment

1. A build-up of algae was observed on the inlet channels and filter walls of the rapid gravity filters. Plant operators could not confirm when the rapid gravity filters were last cleaned.



3. Management and Control

3.1

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

Answer

No

Comment

1. A recommendation was raised by the EPA in an audit on 07/09/2022 as follows "Irish Water should notify the EPA and consult with the HSE in the event that filtered water turbidity cannot be maintained below 0.3 NTU."

2. During the audit, plant operators stated that this protocol is not currently in place, and the current incident response protocol with regard to turbidity is only triggered when final water turbidity exceeds 1NTU.



4.1

Is the treatment plant optimised for the removal of manganese?

Answer

No

Comment

1. There have been recurring exceedances of the manganese parametric value in the Srowland WTP final water since 2022. There is no manganese treatment in place at Srowland WTP currently.

2. Testing for manganese remains in place at the WTP and ongoing weekly sampling is carried out at the start of the Barrow Regional PWS and Barrow Poulaphouca Blend PWS networks. Ongoing investigative sampling in the network demonstrates that although there are recurring failures to meet the manganese parametric value at the WTP, these are not manifesting in the network, with the exception of a network failure in 2023 and another in 2024.

3. Uisce Éireann are in regular consultation with the HSE, who have advised that the parametric failures are not considered to pose a risk to public health of such significance that consumers should be notified.

4. In addition to ongoing monitoring and targeted flushing programmes, the following scope of works have been defined and agreed by Uisce Éireann in order to optimise the WTP for the removal of manganese:

- Installation of a potassium permanganate dosing system with the flexibility of 3 possible dosing points (pre and post bankside raw water storage, and pre filters)
- Installation and commissioning of a minimum of two manganese monitors (raw and final water)

Uisce Éireann's estimated date for completion of these works is Q4 2026.

> 5. Supply on the Remedial Action List

5.1

	Answer
Do the audit findings support progress made with the Remedial Action List upgrades?	Yes
Comment	
<p>1. Uisce Éireann have defined a RAL Action Programme with a timeline for completion of all elements by Q4 2026. The Action Programme includes the following scope of works:</p> <ul style="list-style-type: none"> • Replacement of UV system • Pilot Filter Commissioning and review • Pilot Plant Study and Actisoft Trial • Additional Monitors at a number of plant processes • Minor Pre-treatment upgrades • Control and Automation upgrades to facilitate use of bank side storage. <p>2. Uisce Éireann have provided interim progress reports on the RAL upgrade works for the WTP via quarterly updates. These interim reports and works completed at the WTP to date were discussed during the audit and are summarised as follows:</p> <ul style="list-style-type: none"> • Uisce Éireann has given prioritisation to the replacement of the UV unit which was planned to commence in Q2 2025, however an approximate date could not be given at the time of the audit. An option remains to move an existing UV system that is no longer required at another WTP, however Uisce Éireann could not confirm at the audit if this solution was feasible or if a new UV unit is to be installed at the WTP. • <i>Cryptosporidium</i> testing is being carried out in the final water since 2021, and a raw water <i>Cryptosporidium</i> testing rig has recently been installed at the Barrow River raw water intake to further progress monitoring, but is not yet operational. A 3.5 log treatment requirement is currently set for the WTP, however Uisce Éireann believe that it is likely that the results of the raw water <i>Cryptosporidium</i> monitoring will demonstrate that 3 log protozoa removal will be sufficient for the source. Uisce Éireann stated that they will confirm this with the EPA in 2025. • Veolia completed a filter media trial which consisted of replacing the current Veolia filter media spec with Uisce Éireann spec material. Uisce Éireann are proceeding with further pilot filter commissioning and review. • Jar testing is ongoing at the WTP and pilot plant trials have taken place, with Actisoft/Actiflo units still under consideration. • Since the previous audit in 2022, UVT/turbidity monitors have been installed, plumbed, and powered on the raw water abstraction and raw water reservoirs. • THM formation potential (THM-FP) testing is carried out on a monthly basis at Srowland WTP to assist in developing the scope of upgrades of the WTP. <p>3. Uisce Éireann is continuing consultation with the HSE in instances of parametric failures such as manganese as detailed in Section 3.1. In addition, quarterly meetings are held between Uisce Éireann and the HSE regarding the treatment deficit at the plant and proposed works.</p> <p>4. Uisce Éireann stated at the audit that at present the action programme is on track to meet the Remedial Action List completion date of Q4 2026.</p>	

Recommendations

Subject	Barrow PWS Audit Recommendations	Due Date	11/07/2025
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. Complete the plant upgrade works as per the Remedial Action Programme completion date of Q4 2026. 2. Put in place an appropriate incident response procedure with regard to filtered water and final water turbidity trigger settings. Uisce Éireann should provide details of this procedure to the EPA. 3. Investigate and rectify the cause of floc carryover from the clarifier into the filters, having regard to the <i>EPA Water Treatment Manual: Coagulation, Flocculation and Clarification</i> and <i>EPA Advice Note No. 15: Optimisation of Chemical Coagulant Dosing</i>. 4. Ensure that the filters are cleaned when required to prevent the build-up of algae on the inlet channels and filter walls. <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 the above 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>		