

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	Dunshaughlin
Organisation	Uisce Éireann
Scheme Code	2300PUB1007
County	Meath
Site Visit Reference No.	SV35156

Report Detail	
Issue Date	03/07/2026
Prepared By	Lisa Noone

Site Visit Detail			
Date Of Inspection	06/05/2026	Announced	Yes
Time In	13:30	Time Out	16:10
EPA Inspector(s)	Lisa Noone		
Additional Visitors			
Company Personnel	Uisce Éireann: Ed Haythornthwaite, Conor Flanagan, Gerry Kelly, Kevin Mahon, Gerry McPhillips, Bryan Smyth, Francis Duffy		

> Summary of Key Findings

1. The EPA is concerned at the findings of the audit carried out at Dunshaughlin Water Treatment Plant (WTP) in relation to the daily operation of the plant and general management and oversight of plant processes, alarms/inhibits and trend data.
2. The audit found that alarms and inhibits have been disabled at the WTP and chlorination post filtration has ceased since the end of January 2026.
3. Monitoring equipment and associated trend data is not reliable and representative of actual water quality.
4. There have been numerous failures to meet the parametric values for iron and colour which have not been appropriately investigated and escalated for action.

Uisce Éireann should submit a report to the EPA on or before 03/08/2026 detailing the actions taken and planned, with timescales, to close out the 12 recommendations in this audit report.

> Introduction

Dunshaughlin Public Water Supply (PWS) serves a population of approximately 8,800 people via Dunshaughlin Water Treatment Plant. The treatment plant produces approximately 3,000 m³/day and sources its water from six boreholes located in the vicinity of the treatment plant. Treatment consists of pre-chlorination for iron/manganese control and rapid gravity filtration. The plant has additional treatment infrastructure including a flocculation tank, and DAFF unit which are not in use.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on operations at the plant.

> Supply Zones Areas Inspected

All plant processes were inspected as part of the audit.



1.1

Was the incident suitably alerted to the plant operators, escalated and managed in order to maintain water quality and protect public health?

Answer

No

Comment

Two main incidents were identified at Dunshaughlin WTP as follows:

(i) Incident 12/04/2026

1. In preparation for the EPA audit on 06/05/2026, the Uisce Éireann compliance team carried out a review of plant trends. They learned that there was an electrical power failure on the 12/04/2026. The plant shut down at this time but was not configured to restart gradually after a shutdown.
2. Uisce Éireann stated that the power failure had caused levels in the water tower to drop below normal levels which agitated sediment. Upon restart of the plant, there was a prolonged spike in turbidity, with a duration of approximately 18 hours, from 20:34 on 12/04/2026 to 14:44 on 13/04/2026, with the highest turbidity measurement of 4.65NTU.
3. Operational staff stated that water ran-to-waste once the issue was identified. The incident of elevated turbidity was escalated locally, but was not escalated from senior operational staff to the Uisce Éireann compliance team or the HSE.
4. Following identification of the incident by the Uisce Éireann compliance team, a site visit was arranged for 01/05/2026 to investigate further. This site visit identified that the turbidity measurements were marginally but persistently above 1NTU. Uisce Éireann then began to initiate the HSE consultation process.
5. Following Uisce Éireann's site visit and prior to the consultation call with the HSE, flushing was carried out on the 30m long sample line feeding the turbidity monitor. Upon flushing, Uisce Éireann observed that the line had been filled with sediment and that this contamination was the cause of the persistent turbidity failures. Uisce Éireann stated that the turbidity readings were not representative, due to the local agitation of entrained sediment.
6. Uisce Éireann proceeded with the HSE INR process and the EPA were notified of the incident on 05/05/2026.

(ii) Incident 06/05/2026

1. Upon review of chlorine residual trends at the EPA audit, it was identified that there was an apparent failure to achieve chlorine contact time (Ct) for approximately 6 hours at Dunshaughlin WTP on the morning of 06/05/2026. During this dip in the chlorine trend on site there was a shorter period where chlorine was below 0.1mg/l.
2. Plant operational staff at the audit stated that work was being carried out to change chlorine dosing from manual dosing to flow proportional. Senior operational staff present at the audit were not aware that this work was ongoing.
3. It was concluded from an assessment of the final water flow trend that untreated water had entered the network during these 6 hours, however at time of the discovery it would have already passed through the supply.
4. Uisce Éireann consulted with the HSE during the audit and it was agreed that there was no immediate risk to human health and there was no requirement for a notice or water restriction.
5. In correspondence received by the EPA on 15/05/2026, Uisce Éireann stated that immediately after the audit on 06/05/2026 it was confirmed that the SCADA was not reliable, and that chlorine residual trends reviewed during the audit were mislabelled with incorrect units.
6. Uisce Éireann stated that the incorrect labelling and display of SCADA trends, and the disabling of alarms was escalated for urgent resolution internally, and that a task force has been set up to address these issues as well as additional upgrades required for the site.
7. Uisce Éireann stated that they are continuing to update the HSE regularly in relation to Dunshaughlin WTP.

Recommendations:

1. Uisce Éireann should provide safe and adequately treated water, and ensure sufficient management oversight of operations at Dunshaughlin WTP to prevent inadequately disinfected water entering the supply.



2. Disinfection

2.1

Is the chlorine dosed appropriately?

Answer

No

Comment

1. At the time of the audit, chlorine was dosed on a fixed basis, as opposed to residual linked or flow proportional dosing. Fixed dosing is only suitable in limited circumstances in accordance with the *EPA Disinfection Manual*.

2. Chlorine is currently dosed prior to filtration for iron and manganese removal, with no additional chlorination post filtration. Operational staff stated that post-filter chlorination was previously in place and could not confirm at the time of the audit as to why it was removed. Uisce Éireann stated at the audit that works were currently underway to reinstate chlorine dosing post filtration.

Recommendations:

2. Uisce Éireann should ensure that chlorine dosing is flow proportional or is linked to the residual chlorine monitor.

3. Uisce Éireann should reinstate post filter chlorination to ensure adequate and stable levels of disinfection.



3. Drinking Water Quality

3.1

		Answer
	Have failures of the parametric values or the detection of pathogenic micro-organisms or parasites in the water supply been adequately investigated?	No
Comment		
1. There have been ongoing failures to meet the parametric value for iron in the Dunshaughlin PWS and at the WTP. 2. 28 iron failures have been reported to the EPA from 05/01/2026 to 22/06/2026 with the highest recorded result of 993ug/l taken in the network on 18/05/2026. The cause of these failures has not yet been identified, however they have been attributed to either cast iron mains in the network, high raw water iron levels and possible sediment build-up in the water tower. 3. During the EPA audit it was noted that raw water iron levels are regularly high, with particular boreholes having higher levels of iron than others. Five failures to meet the iron parametric value in the final water having been reported to the EPA from 28/01/2026 to 22/06/2026. 4. There have also been seven reported failures to comply with the colour parametric value from 02/04/2026 to 25/05/2026, in addition to a number of complaint clusters reported to Uisce Éireann relating to colour . Recommendations: 4. Uisce Éireann should ensure that the exceedances of the iron and colour parametric values in the network and at the WTP are investigated further, considering results obtained throughout the treatment process including raw water, final water and network readings. Uisce Éireann should ensure that appropriate corrective actions are taken to address these failures and that the EPA is updated accordingly.		



4.1

Is there a documented alarm response procedure?

Answer

No

Comment

1. There is no documented alarm response procedure in place detailing what response will be made to alarms and specific steps to be taken by operators and other responders.

Recommendation:

5. Uisce Éireann should develop a procedure and deliver appropriate training for responding to and escalating all alarms generated at the water treatment plant, documenting the corrective actions and setting out delegation of responsibilities.

4.2

Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?

Answer

No

Comment

1. There are no shutdowns enabled at the WTP to prevent inadequately treated water from entering the network.

2. Shutdowns were previously in place at the WTP as confirmed in a previous EPA audit on 13/03/2024, but have not been active on the site since the end of January 2026.

Recommendations:

6. Uisce Éireann should ensure appropriate shutdowns/inhibits for critical treatment processes are reinstated at the WTP and enabled at all times.

4.3

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. There are no alarms enabled at the WTP to alert operators to deteriorating water quality and/or the failure of a critical treatment process.

2. Alarms were previously in place at the WTP but have not been active on the site since the end of January 2026.

Recommendations:

7. Uisce Éireann should ensure appropriate warning and action alarms for critical treatment processes are reinstated at the WTP and enabled at all times to allow a response preventing inadequately treated water from entering the network.

4.4

	Answer
Are online monitors operational?	No
Comment 1. As per Section 1.1, Uisce Éireann stated that final water turbidity readings are not representative due to a build up of sediment in the sampling line. In addition, during the audit, operators could not confirm if final water turbidity readings were taken from the monitor labelled "TU002 or "final fluorine". 2. Individual filter turbidity monitors, and combined filter turbidity monitors were not operating correctly during the audit. Uisce Éireann stated that the turbidity instrumentation on site is considered less reliable than other models and is no longer supported in Ireland by the manufacturer. 3. A plan is in place to replace current filter turbidity monitors. <u>Recommendations:</u> 8. Uisce Éireann should (i) repair or replace filter turbidity monitors, (ii) maintain sampling lines to ensure accurate and representative results, and (iii) correctly label the final water turbidity monitor.	

4.5

	Answer
Did process trends indicate satisfactory water treatment plant performance?	No
Comment 1. As per Section 1.1, review of chlorine residual trends during the audit showed an apparent failure to achieve Ct on the morning of 06/05/2026. 2. In the days following the audit, Uisce Éireann stated that the SCADA trends reviewed on the day were not reliable and were mislabelled with incorrect units. <u>Recommendation:</u> 9. Uisce Éireann should submit chlorine residual trends at the Ct verification point with the correct units and labelling from the 06/05/2026 to 02/07/2026 to verify adequate Ct.	

4.6

	Answer
Is there appropriate oversight of plant performance?	No
Comment	

1. Inadequate oversight of plant trends and general operation of the WTP was a common factor in the incidents of 12/04/2026 and 06/05/2026.
2. There were a number of shortcomings with regard to the escalation of plant performance issues at the WTP e.g. the disabling of alarms and inhibits, as well as a lack of oversight and review of SCADA trends to support operational staff in their work and intervene where necessary.
3. Incidents at the plant had not been escalated appropriately to the Uisce Éireann compliance team and HSE where necessary.
4. It is noted that these issues occurred during a period of significant staff turnover at Dunshaughlin WTP and at supervisory levels.

Recommendations:

10. Uisce Éireann should ensure prompt and timely escalation of incidents internally, as well as timely consultation with the HSE and notification to the EPA of incidents and parametric failures where appropriate. Uisce Éireann should ensure that there are robust systems of reviews and checks on WTP performance, SCADA trends, and the status of alarms and inhibits, and act on any deficiencies identified to protect public health and maintain drinking water quality. This recommendation covers actions on staff training, operating procedures, and establishing managerial and process oversight of plant operations.
11. Uisce Éireann should put suitable controls in place to prevent accidental or unauthorised changes to alarm and inhibit settings.



5. Site Specific Issues

5.1

Are plans in place to address current deficiencies and plant performance issues at the plant?

Answer

Yes

Comment

1. During the audit, Uisce Éireann WTP supervisory staff stated that a number of service requests had been raised following a WTP meeting in January 2026. These works included;

- PLC programming for filter backwashing
- Reinstating chlorine dosing for disinfection post filtration
- Works on the poly batching unit
- Enabling works for the soda ash dosing system
- Filter maintenance including works on level sensors and filter media replacement
- Replacement of turbidity monitors on individual filter outlets and combined filter outlets

2. Following the EPA audit, the Uisce Éireann compliance team confirmed that a dedicated task force including representatives from compliance, frontline operations, technical operations, SCADA and telemetry and process optimisation teams has been put in place to address the various issues identified at the WTP. The task force will oversee progress of upgrade works on site.

3. Uisce Éireann stated that the following daily checks are being carried out on site:

- Daily testing at the plant - with reliance on results displayed on actual monitoring equipment rather than trended data.
- Daily network chlorine tests will continue.
- Flushing of sample lines, with the final water sample line to be flushed at a minimum of 2 times per week.
- To continue network flushing.

4. In addition, supplementary investigative lab testing has been arranged for one month to include;

- Network sampling for iron, E.coli, coliforms, colour, pH, turbidity, conductivity, temperature, free chlorine and total chlorine.
- WTP final water sampling for colour, iron, manganese, pH, turbidity, UV transmittance, conductivity, free chlorine and total chlorine.

5. Uisce Éireann stated that a number of initiatives and plant upgrades were already planned and underway, with some having been expedited on the morning of 07/05/2026, with oversight from the task force as follows;

- Process operations improvements.
- Incident identification, escalation and response training for operational staff.
- SCADA / Telemetry upgrades.
- Plant upgrade works including operational and large scale upgrade works.
- Network issues including flushing and water tower maintenance.
- Management of communications including the escalation processes and review of NOMC oversight arrangements.

Recommendation:

12. Uisce Éireann should progress all works and training needs that have been identified, and provide an update on the work carried out by the dedicated task force to address the operational and treatment process deficiencies identified at the plant.

Recommendations

Actions required by Uisce Éireann

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.

Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the recommendations raised in this report without delay.

Response to Audit Report

Uisce Éireann should submit a report to the EPA on or before the date specified in the Summary of Key Findings detailing the actions taken and planned, with timescales, to close out the recommendations in this audit report.

The EPA advises that the findings and recommendations from this report should, where relevant, be addressed at other public water supplies.

Publication of Reports

Audit reports are published to the EPA's website, www.epa.ie, typically 1 month after the audit report is issued to Uisce Éireann.