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	Enfield
Organisation	Uisce Éireann
Scheme Code	2300PUB1010
County	Meath
Site Visit Reference No.	SV30165

Report Detail

Issue Date	18/06/2024
Prepared By	Lorcan Farrell

Site Visit Detail

Date Of Inspection	14/06/2024	**Announced**	No
Time In	10:30	**Time Out**	11:35
EPA Inspector(s) **Additional Visitors**	Lorcan Farrell		
Company Personnel	Uisce Éireann: Daniel Behan, Jamie Blacoe. Meath County Council (Working in partnership with Uisce Éireann): John Carroll, Joseph Cleary.		

Summary of Key Findings

1. Enfield Water Treatment Plant (WTP) was operating satisfactorily on the day of the audit.

2. An issue with the final water turbidity monitor is leading to unnecessary plant shutdowns.

Introduction

Enfield Public Water Supply serves a population of 3,695 and is supplied by Enfield WTP. The treatment plant produces approximately 1,400 m3/day depending on demand and sources its water from a single borehole located at the treatment plant. Treatment consists of pre-chlorination for iron and manganese removal, pressure filtration, UV disinfection and secondary chlorination.

The population and production volumes for the supply available at the audit were not reflective of the volume supplied and population served indicated on the EPA EDEN system.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the alarms and inhibits in place at the treatment plant and the procedures in place to ensure appropriate oversight of treatment processes.

Supply Zones Areas Inspected

The audit included a site tour of Enfield WTP.

1. Alarms, Inhibits & Oversight Audits 2024

		Answer
1.1	Were online monitors operational?	No

Comment

1. Trends received before the audit indicated that there may be an issue with two chlorine monitors in place at the treatment plant. The CL002 monitor samples the treated water leaving the plant before it enters the clear water tank and the "Enfield WTP BPS distribution" monitor samples water leaving the reservoir as it enters the supply network. Both monitors which have a common control/display unit appeared to be producing flat lines. An explanation for this could not be established at the audit.

		Answer
1.2	Were all findings of the UÉ alarm and inhibit review implemented?	No

Comment

1. Uisce Éireann confirmed that some recommendations from their previous alarm and inhibit review carried out at the treatment plant in 2022 remain outstanding. These recommendations relate to the UV disinfection and filtration systems and are believed to be complete but this could not be confirmed at the audit.

		Answer
1.3	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No

Comment

1. A plant shutdown setpoint of 1 NTU with a 15 minute time delay is in place at the treatment plant based on the output of the final water turbidity monitor. This shutdown time delay is not in accordance with the 3 minute delay specified in Section 5.5.1 of the *EPA Water Treatment Manual: Filtration.*

2. Site Specific Issues

		Answer
2.1	Do trends indicate that final water turbidity is less than 1 NTU limit at all times?	No

Comment

1. Final water turbidity trends submitted before the audit indicated spikes exceeding 1 NTU occurring on a regular basis at the treatment plant. Meath County Council confirmed that these spikes were leading to plant shutdowns occurring as a result of the 1 NTU final water turbidity shutdown limit in place at the plant. It was also confirmed that the issue is being investigated and that air bubbles in the sample line leading to the final water turbidity monitor were suspected to be the cause of the turbidity spikes. No timescales were available for when this issue would be resolved.

Recommendations

Subject	Enfield Audit Recommendations	**Due Date**	18/07/2024
Action Text	**Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.** 1. Turbidity: (i) resolve the issue affecting the final water turbidity monitor leading to plant shutdowns and, (ii) ensure that the plant shutdown setpoint based on final water turbidity leaving the plant is controlled by the regulatory 1 NTU (with a maximum delay of 3 minutes) as detailed in the *EPA Water Treatment Manual: Filtration.* 2. Investigate and resolve the potential issues affecting chlorine residual monitors at the treatment plant so that they produce reliable trended data at all times. 3. Complete all recommendations arising from the alarm and inhibit review carried out at the treatment plant. 4. Update EDEN with the correct volume supplied and population served figures for the supply. **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 should submit a report to the EPA on or before 18/07/2024 detailing the actions taken and planned, with timescales, to close out the above recommendations. The EPA advises that the findings and recommendations from this audit report should, where relevant, be addressed at other public water supplies.		