

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	Longwood
Organisation	Uisce Éireann
Scheme Code	2300PUB1014
County	Meath
Site Visit Reference No.	SV30600

Report Detail	
Issue Date	11/11/2024
Prepared By	Lisa Noone

Site Visit Detail			
Date Of Inspection	15/10/2024	Announced	Yes
Time In	13:30	Time Out	14:50
EPA Inspector(s)	Lisa Noone		
Additional Visitors			
Company Personnel	Uisce Éireann: Joseph Moran, Jamie Blacoe, Daniel Pur Meath County Council (working in partnership with Uisce Eireann): Joe Cleary		

> Summary of Key Findings

1. Alarms and inhibits in place for chlorine residual were not appropriate to ensure that treated water at the extremities of the distribution network contains at least 0.1 mg/l of chlorine.
2. The alarm set point for turbidity was inadequate to allow a timely and effective response by operational staff to elevated turbidity levels.
3. An appropriate cascade system and associated procedures are not in place for responding to alarms generated at the plant allowing for verification that an alarm has been responded to.

> Introduction

Longwood Public Water Supply (PWS) produces circa. 420 m³/day of water serving a population of approximately 1,731 people. Raw water is abstracted from two boreholes located at the Water Treatment Plant (WTP). Treatment processes at the WTP include oxidation and pressure filtration for the removal of iron and manganese, with duty and standby UV units disinfection, and chlorination for secondary disinfection.

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 WTP and the procedures in place to ensure appropriate oversight of treatment processes

> Supply Zones Areas Inspected

Treatment processes on-site were inspected as part of the audit as well as the on-site reservoir.



1. Alarms, Inhibits & Oversight Audits 2024

		Answer
1.1	Is continuous monitoring located appropriately to verify treatment performance?	No
Comment		
1. Uisce Éireann could not demonstrate at the audit that turbidity monitors are in place at the outlet of each filter.		

		Answer
1.2	Are suitable alarm settings in place to alert operators to deteriorating water quality or the failure of a critical treatment process?	No
Comment		
1. Alarms and inhibits were in place at the WTP for chlorine residual and turbidity as follows:		
<u>Chlorine residual</u> (time delay 15 minutes)		
<ul style="list-style-type: none"> • High high (shutdown): 2mg/l • High (alarm): 1.5mg/l • Low low: 0.1mg/l • Low: 0.3mg/l 		
Turbidity (time delay 5 minutes):		
<ul style="list-style-type: none"> • High high (shutdown): 1NTU • High (alarm): 0.8NTU 		
2. The low and low low chlorine alarm set-points are below the target chlorine residual concentration of 0.5mg/l leaving the WTP. These alarms are not appropriate to ensure that treated water at the extremities of the distribution network contains at least 0.1 mg/l residual chlorine. In addition, the 15 minute time delay is considered too long to allow a timely and effective response by operational staff.		
3. The 5 minute time delay for turbidity is considered too long to allow a timely and effective response to ensure less than 1NTU prior to UV disinfection.		

		Answer
1.3	Are dial out arrangements suitable to allow a timely response?	No
Comment		
1. Critical alarms are dialled-out on a group-basis to operational personnel. Alarms are responded to on a hierarchical basis however there is no way of verifying that alarms have been responded to.		

		Answer
1.4	Has UÉ carried out an alarm and inhibit review at the water treatment plant?	No

		Answer
1.5	Is there a documented alarm response procedure?	No

		Answer
1.6	Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?	No



2. Site Specific Issues

	Answer
2.1 Have the recommendations from the previous EPA audit been satisfactorily addressed?	No
Comment	
1. The EPA recommended at the previous audit on 23/04/2021 that a run-to-waste facility should be put in place on the pressure filters to prevent out of specification water from entering the supply. A run-to-waste facility has been installed on the pressure filters, however commissioning is not yet complete.	

Recommendations

Subject	Longwood PWS Audit Recommendations	Due Date	11/12/2024
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. Review alarm set points and time delays in place for chlorine residual and turbidity.2. Carry out an Alarm and Inhibit Review post upgrade works and implement the findings to protect treatment processes and treated water quality.3. Develop a procedure and deliver appropriate training (i) covering the verification of alarms/shutdowns status following maintenance or other works completed at the treatment plant, and (ii) for responding to and escalating all alarms generated at the water treatment plant. Both procedures should clearly document the corrective actions and set out delegation of responsibilities.4. Put in place an appropriate cascade system for responding to alarms generated at the plant which allows for verification that an alarm has been responded to.5. Provide confirmation on (i) on the location of the turbidity monitors post pressure filtration (ii) the completion and installation of the run-to-waste facility. <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 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>		