

# 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	
<b>Name of Installation</b>	South Louth & East Meath
<b>Organisation</b>	Uisce Éireann
<b>Scheme Code</b>	2100PUB1019
<b>County</b>	Louth
<b>Site Visit Reference No.</b>	SV28426

Report Detail	
<b>Issue Date</b>	20/12/2023
<b>Prepared By</b>	Lorcan Farrell

Site Visit Detail			
<b>Date Of Inspection</b>	07/12/2023	<b>Announced</b>	No
<b>Time In</b>	10:30	<b>Time Out</b>	11:30
<b>EPA Inspector(s)</b>	Lorcan Farrell		
<b>Additional Visitors</b>			
<b>Company Personnel</b>	Uisce Éireann: Daniel Behan, Jamie Blacoe. Meath County Council (Working in partnership with Uisce Éireann): Peter Lynch, Helen McDonnell, Norbert McMahon.		

## > Summary of Key Findings

1. There is no final water turbidity monitor in place at Curragha Water Treatment Plant (WTP) to prevent inadequately treated water entering the supply network.
2. There is no chlorine residual monitor in place to provide chlorine contact time verification for Curragha WTP.

## > Introduction

Curragha WTP is included under the South Louth & East Meath Public Water Supply (PWS) zone code however, it only supplies water to Ashbourne/Ratoath which serves a population of 12,434 people (EDEN figure) and has a standalone water supply zone code.

The plant produces approximately 900 m<sup>3</sup>/day which is pumped to Rath Reservoir where it is combined with water from Rath WTP and water supplied from South Louth & East Meath PWS.

Curragha WTP is supplied by two boreholes located at the treatment plant with treatment of the combined output of the boreholes consisting of pre-chlorination and pressure filtration.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water.

## > Supply Zones Areas Inspected

The audit included a site tour of Curragha WTP.



## 1. Disinfection

		Answer
1.1	Is the residual chlorine monitored at a suitable sample location after contact time has been completed?	No
<b>Comment</b>		
<p>1. The chlorine contact time validation calculation for the Curragha WTP identifies the inlet of Rath Reservoir as the point of chlorine contact time validation. There is no residual chlorine monitor located at the reservoir to provide verification of chlorine contact time.</p> <p>2. Meath County Council staff confirmed that the treatment plant was assessed for upgrade works under the Uisce Éireann Disinfection Programme in 2019. It was confirmed that works were not progressed under the disinfection programme as Curragha WTP was selected to be progressed under the Uisce Éireann Water Treatment Plant Upgrade Programme. Meath County Council Staff confirmed that the preliminary design for the upgrades has been developed however, no timescales were available for when works would start or conclude. Chlorine contact time verification was confirmed to be included under these upgrade works.</p> <p>3. There is a residual chlorine monitor (with associated alarms and plant shutdown setpoints) located after sodium hypochlorite dosing and pressure filtration at the treatment plant. These settings ensure a suitable plant shutdown response to a dosing failure.</p> <p>4. The chlorination validation calculation submitted before the audit indicated a target chlorine contact time of 19.50 mg.min/l and a total effective contact time of 15.24 mg.min/l. The total effective contact time indicated is not sufficient to meet the target chlorine contact time necessary for verification of primary disinfection.</p> <p>5. A copy of the Uisce Éireann Incident Communications Response Guidance Form was present on the wall of the treatment plant containing site specific trigger levels protecting critical plant processes at the treatment plant. Trigger levels for warning alarms based on post-dosing residual chlorine monitoring were absent from the document.</p>		

		Answer
1.2	Is there a suitable monitoring frequency for residual chlorine in the network with records available?	Yes
<b>Comment</b>		
<p>1. Meath County Council confirmed that free chlorine residual monitoring takes place several times per week within the South Louth &amp; East Meath supply network. A map of network sampling points provided before the audit indicates there are sections of the network, particularly at the extremities, where free chlorine residuals are not sampled regularly.</p>		



## 2. Management and Control

		Answer
2.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	Yes
<b>Comment</b>		
<p>1. The protozoal log treatment requirement assigned for Curragha WTP is a 3 log requirement. A source and sanitary survey has not been completed to confirm the calculated log treatment value assigned to the treatment plant. No timescales for completion of a source and sanitary survey were available.</p>		

		Answer
2.2	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
<b>Comment</b>		
<p>1. There is no final water turbidity monitor in place at the treatment plant to prevent inadequately treated water entering the supply network. Meath County Council confirmed that provision of a final water turbidity monitor would be included in upgrade works under the Uisce Éireann Water Treatment Plant Upgrade Programme. No timescales were available for when works under the upgrade programme would start or conclude.</p> <p>2. There is no run to waste facility at the treatment plant. Meath County Council confirmed that provision of a run to waste system may be considered for inclusion under the Uisce Éireann Water Treatment Plant Upgrade Programme.</p>		



### 3. Site Specific Issues

	Answer
3.1 Does the water supply zone code reflect the area supplied by Curragha Water Treatment Plant?	No
<b>Comment</b>	
<p>1. Curragha WTP is assigned to South Louth &amp; East Meath water supply zone code but it does not supply this area.</p> <p>2. Treated water from Curragha WTP supplies the Ashbourne/Ratoath area which has its own separate water supply zone code (2300PUB2042).</p>	

## Recommendations

<b>Subject</b>	South Louth & East Meath (Curragha WTP) - Audit Recommendations	<b>Due Date</b>	22/01/2024
<b>Action Text</b>	<p><b>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.</b></p> <ol style="list-style-type: none"> <li>1. Turbidity: (i) Install a continuous turbidity monitor on the final treated water at Curragha Water Treatment Plant and ensure that appropriate warning alarms/plant shutdowns are in place in to protect the 1 NTU disinfection limit, and (ii) carry out manual daily turbidity monitoring until a continuous turbidity monitor is operational.</li> <li>2. Disinfection: (i) Install a continuous chlorine residual monitor (with warning alarm and plant shutdown setpoints) at an appropriate location to ensure target contact time for the treatment plant is achieved and verified at all times, and (ii) revise the chlorination validation calculation to ensure that total effective contact time exceeds the calculated target chlorine contact time.</li> <li>3. Complete a source and sanitary survey to confirm the log treatment requirement for the treatment plant.</li> <li>4. Investigate the feasibility of installing a run to waste system at the treatment plant.</li> <li>5. Update the Uisce Éireann Incident Communications Response Guidance Form with the appropriate trigger levels that protect critical processes at the water treatment plant.</li> <li>6. Review the network chlorine residual monitoring programme in South Louth &amp; East Meath supply network to ensure that sample locations are sufficient to verify residual chlorine levels in the network, including at dead ends/network extremities.</li> <li>7. Review the need to include Curragha Water Treatment Plant under the Ashbourne/Rathoath Public Water Supply zone code and amend as necessary.</li> </ol> <p><b>Actions required by Uisce Éireann</b></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 22/01/2024 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>		