

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	Mount Talbot/Four Roads
Organisation	Uisce Éireann
Scheme Code	2600PUB1001
County	Roscommon
Site Visit Reference No.	SV27530

Report Detail	
Issue Date	27/03/2023
Prepared By	Lorcan Farrell

Site Visit Detail			
Date Of Inspection	24/02/2023	Announced	No
Time In	10:00	Time Out	12:05
EPA Inspector(s)	Lorcan Farrell		
Additional Visitors			
Company Personnel	Uisce Éireann: Pat Collins, Colette Connolly, Vincent McGrath. Roscommon County Council (Working in partnership with Uisce Éireann): Tommy Daly, Deirdre Fallon, Caroline Menton, Morris Mulhearn.		

> Summary of Key Findings

(1) Mount Talbot/Four Roads Water Treatment Plant (WTP) does not have an on-site SCADA terminal and is not connected to the county SCADA system. This limits the accessibility of plant process information and trended performance data by operational and supervisory staff.

(2) There was no site specific incident response and escalation procedure in place at the treatment plant.

> Introduction

Mount Talbot/Four Roads Public Water Supply serves a population of 3,593 people (EDEN figures) and the treatment plant produces approximately 2,050 m³/day depending on demand. The treatment plant sources its water from two springs adjacent to the plant with treatment of the combined water from both springs consisting of coagulation (when needed), filtration, UV disinfection, chlorination and fluoridation.

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 Mount Talbot/Four Roads WTP.



1. Alarms, Inhibits & Oversight Audits 2023

	Answer	
1.1	Is there a documented site specific incident response and incident escalation process?	No
Comment		
(1) There was no site specific incident response and escalation procedure or up to date contact list in place at the treatment plant.		

	Answer	
1.2	Did staff confirm they have received training on the site specific incident response and incident escalation process?	No
Comment		
(1) Supervisory staff present at the audit had received Uisce Éireann's incident response training however, operational staff could not confirm that they had attended the training. In correspondence received after the audit, it was stated by Uisce Éireann that an additional incident management training session was to be run on 02/03/2023 and would include any remaining operations staff and all Roscommon County Council caretakers who had not received the initial training.		

	Answer	
1.3	Has UÉ carried out an alarm and inhibit review at the water treatment plant?	Yes
Comment		
(1) An alarm and inhibit review was carried out in March 2022.		

	Answer	
1.4	Were all findings of the UÉ alarm and inhibit review implemented?	No
Comment		
(1) The findings of the alarm and inhibit review indicated that the treatment plant should be connected to the county SCADA system for increased oversight of plant process information and access to trended performance data. Works are scheduled to address the shortcomings identified in the alarm and inhibit review and are due for completion by Q3 2023.		

		Answer
1.5	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment		
<p>(1) A final water turbidity shutdown setpoint of 0.7 NTU was in place at the treatment plant and had a time delay of 15 minutes. This shutdown time delay is not in accordance with the three consecutive minutes time delay (at a turbidity in excess of 1 NTU) as specified in section 3.4.3 of the <i>EPA Water Treatment Manual: Filtration</i>. This could potentially lead to water above 1 NTU leaving the treatment plant in certain circumstances for a period of time in excess of three minutes.</p>		

		Answer
1.6	Are plant performance trends accessible by operational staff at the water treatment plant?	Yes
Comment		
<p>(1) Plant performance trends are accessible at the treatment plant but have limitations in terms of HMI accessibility. The HMI screens are small, difficult to navigate and froze for a time while trying to access trends on the day of the audit. A dedicated SCADA terminal at the the treatment plant would allow operational staff increased ease of access to plant process information and trended performance data.</p>		

		Answer
1.7	Are plant performance trends accessible remotely?	No
Comment		
<p>(1) Plant performance trends are not accessible remotely as the treatment plant is not linked to the County SCADA system. The procedure in place to access trended data by supervisory staff is to download the data from the HMI via USB and take off-site to view. The treatment plant is due to be linked to the County SCADA system in works that are due to take place this year and will provide real-time visibility of plant performance trends to supervisory staff.</p>		

		Answer
1.8	Is there appropriate oversight of plant performance trends?	No
Comment		
<p>(1) Plant performance trends are not reviewed regularly by supervisory staff. The connection of the plant to the county SCADA system due to take place this year will provide real-time visibility of plant performance trends to supervisory staff.</p> <p>(2) In pre-audit information submitted to the EPA, a period of of time was identified on 10/01/2023 where final water turbidity in excess of 1 NTU appeared to leave the plant. This was discussed at the audit however, it was not possible to establish the exact circumstances of the event via the HMI and whether final water with a turbidity in excess of 1 NTU had left the plant. Uisce Éireann conducted a detailed review of this event after the audit and concluded that there had been an issue with the turbidity monitor on that day and it was highly unlikely that water with a turbidity in excess of 1 NTU left the plant. Uisce Éireann stated that this review was made more complicated and took a longer time to complete due to the absence of a connection to the county SCADA system and reiterated the need for the scheduled upgrade works to take place to provide the ability to review real-time and historical data.</p>		

		Answer
1.9	Is there a documented alarm response procedure?	No
Comment		
<p>(1) While there are informal procedures covering the response to alarms at the treatment plant, there is no documented site specific alarm response procedure in place.</p>		

		Answer
1.10	Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?	No
Comment		
<p>(1) There are informal procedures covering verification of alarms and inhibits status following works carried out at the treatment plant however, there is no formal procedure or system in place such as a tag in/tag out system or alarm/shutdown testing following completion of works on-site.</p>		



2. Site Specific Issues

	Answer
2.1	Have operational staff attended the Plant Operations for Water Treatment; QQI Level 5 course?
	No
Comment	
(1) The caretaker at the treatment plant and the standby caretaker who provides cover have not completed the Plant Operations for Water Treatment; QQI Level 5 course. Supervisory staff present at the audit had attended the course previously.	

	Answer
2.2	Are the abstraction sources for the treatment plant adequately protected against contamination?
	No
Comment	
(1) Two springs supply raw water to the treatment plant via a raw water channel that is partially open to the elements. The furthest spring from the treatment plant is enclosed in an infiltration gallery while the second spring is located in the open, half way along the raw water channel. It was stated that Uisce Éireann Asset Delivery have assessed the current source protection at the site but no plans or timescales for source protection upgrades have been agreed.	

Recommendations

Subject	Mount Talbot/Four Roads Audit Recommendations	Due Date	27/04/2023
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. Ensure that: (i) the treatment plant is connected to the county SCADA system, (ii) that plant process information and trended performance data are available to operational and supervisory staff via SCADA, (iii) that there are robust systems of reviews and checks on water treatment plant performance data which should include regular review of SCADA trends by operational and supervisory staff.2. Ensure that the Uisce Éireann Incident Communications Response Guidance Form with site specific information including contacts for escalation and relevant trigger levels protecting critical processes is displayed at the treatment plant and ensure that training on incident response in line with the guidance form is undertaken by all staff.3. Ensure that an appropriate final water turbidity shutdown time delay is in place at the treatment plant in accordance with the specified three consecutive minutes time delay (at a turbidity in excess of 1NTU) as per the <i>EPA Water Treatment Manual: Filtration</i>.4. Ensure that: (i) a formal site specific alarm response procedure is in place at the treatment plant and (ii) provide training to relevant staff (including relief and temporary staff) on the requirements of the alarm response procedure.5. Ensure that an appropriate procedure is in place covering verification of alarms/inhibits status following maintenance or other work completed at the treatment plant.6. Ensure that staff receive appropriate training, for example the QQI Level 5 course - Plant Operations for Water Treatment.7. Prioritise upgrade works at the treatment plant to ensure raw water sources are adequately protected. <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 27/04/2023 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>		