

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	Roscommon Central Water Supply Scheme
Organisation	Uisce Éireann
Scheme Code	2600PUB1002
County	Roscommon
Site Visit Reference No.	SV27861

Report Detail	
Issue Date	16/06/2023
Prepared By	Lorcan Farrell

Site Visit Detail			
Date Of Inspection	17/05/2023	Announced	Yes
Time In	11:00	Time Out	13:15
EPA Inspector(s)	Lorcan Farrell		
Additional Visitors			
Company Personnel	Uisce Éireann: Vincent McGrath. Glan Agua: John Finn, Paddy Kenny, Shane O'Donnell. Roscommon County Council (Working in partnership with Uisce Éireann): Morris Mulhearn.		

> Summary of Key Findings

1. The audit found that Ballinagard Water Treatment Plant (WTP) was operating satisfactorily on the day of the audit.
2. The chlorine contact time validation calculation for the supply does not include the volume of Gallowstown Reservoir in the calculation. The chlorine residual monitors located on the outlets of Gallowstown Reservoir provide chlorine contact time verification.

> Introduction

Roscommon Central Water Supply Scheme serves a population of 7,385 people (EDEN figure) and is supplied by Ballinagard WTP which produces approximately 2,558 m³/day. The source for the treatment plant is Ballinagard Spring located on-site, approximately 200m from the treatment plant. There are four boreholes connected to the treatment plant which have not been used for a number of years as Ballinagard Spring provides ample raw water capacity. Treatment at the plant consists of coagulation, adsorption clarification, filtration, UV disinfection, chlorination, and fluoridation. The treatment types recorded in EDEN require updating.

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

> Supply Zones Areas Inspected

The audit included a site tour of Ballinagard WTP.



1. Protozoal Barriers Audits 2023

		Answer
1.1	Is there a documented site specific incident response and incident escalation process?	No
	Comment	
	1. A documented incident response procedure is in place at the treatment plant. However, the Uisce Éireann Incident Communications Response Guidance Form was not in place at the treatment plant displaying site specific contact information for escalation and relevant trigger levels protecting critical plant processes.	
		Answer
1.2	Did UÉ confirm the target residual for chlorine contact time?	No
	Comment	
	1. The chlorine contact time validation calculation submitted by Uisce Éireann before the audit includes a contact tank at the treatment plant and the rising main that connects the treatment plant with Gallowstown Reservoir. The residual chlorine monitors which provide chlorine contact time verification are located on the outlets of Gallowstown Reservoir. However, the chlorine contact time validation calculation does not include Gallowstown Reservoir as part of the calculation.	
	2. The current shutdown setpoint of 0.3 mg/l in place at the treatment plant based on the residual chlorine monitors located on the outlets of Gallowstown Reservoir may need to be revised when Gallowstown Reservoir is included in a revision of the chlorine contact time validation calculation.	
		Answer
1.3	Is the UV system suitably validated?	No
	Comment	
	1. The UV disinfection system in operation at the treatment plant is validated under USEPA criteria. The system was operating within the criteria of both the manufacturers plate and the operational design parameters as indicated on an operational sign posted on the UV system control unit. However, a copy of the UV validation certificate was not available on-site on the day of the audit.	



2. Site Specific Issues

	Answer
2.1	Are suitable alarm settings in place to alert operators to deteriorating water quality or the failure of a critical treatment process?
	No
Comment	
<p>1. There are plant shutdown setpoints in place at the treatment plant for critical treatment processes. When a shutdown set point is reached, the plant shuts down to prevent inadequately treated water leaving the plant and an alarm is generated to notify the caretaker that a shutdown has occurred. While these shutdown setpoints prevent inadequately treated water from leaving the plant, the majority do not possess corresponding warning alarm levels at lower values that would alert the operator in the event of deteriorating water quality or the failure of a critical treatment process before a plant shutdown occurs.</p> <p>2. The operator stated that the plant is to receive upgrades under a capital replacement fund. These upgrades include the addition of warning alarms to alert operators of deteriorating water quality or problems with a critical treatment process. The upgrades are due to be completed by Q4 2023.</p>	

	Answer
2.2	Were online monitors reading accurately?
	No
Comment	
<p>1. The fluoride residual monitor and the post-coagulant dosing pH meter were not reading accurately. The fluoride residual monitor is due to be replaced in the capital replacement fund upgrade works due to be completed by Q4 2023.</p>	

Recommendations

Subject	Roscommon Central Water Supply Scheme - Audit Recommendations	Due Date	17/07/2023
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. Update the chlorine contact time calculation for the site and ensure that the plant shutdown setpoint in place at the treatment plant based on verified chlorine residuals after contact time is set at a level that ensures target contact time is achieved at all times.2. Develop and display the Uisce Éireann Incident Communications Response Guidance Form at the treatment plant. The form should include site specific information including Uisce Éireann and Glan Agua contacts for escalation and relevant trigger levels protecting critical plant processes.3. Install appropriate warning alarms at the treatment plant to alert operators of deteriorating water quality or problems with a critical treatment process.4. Submit a copy of the validation certificate for the UV disinfection system in use at the treatment plant.5. Replace the fluoride residual monitor and return the post-coagulant dosing pH monitor to working order.6. Update EDEN with the correct treatment types that are in place at the treatment plant. <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 17/07/2023 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>		