

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	Charleville
Organisation	Uisce Éireann
Scheme Code	0500PUB1103
County	Cork
Site Visit Reference No.	SV27754

Report Detail	
Issue Date	12/06/2023
Prepared By	Criona Doyle

Site Visit Detail			
Date Of Inspection	16/05/2023	Announced	Yes
Time In	10:20	Time Out	11:45
EPA Inspector(s)	Criona Doyle		
Additional Visitors			
Company Personnel	Uisce Éireann: Aine Butler, Sharon O'Dwyer, Pat Britton, Cormac Bergin. Cork County Council (working in partnership with with Uisce Éireann): Frances Whoriskey, Jason O'Donoghue, Garry Collins, Pauline McAree.		

> Summary of Key Findings

1. The plant was operating satisfactorily on the day of the audit.
2. There is no chlorine monitor with alarm on the Churchtown line to verify that contact time has been achieved.

> Introduction

The Charleville Public Water Supply (PWS) supplies on average 5,912m³/d and serves a population of 8,147 (EDEN figures).

Raw water is obtained from 4 no. boreholes (BH2, BH3, BH4 & BH5) adjacent to the Charleville Water Treatment Plant (WTP). Treatment consists of 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 water treatment plant (WTP) and the procedures in place to ensure appropriate oversight of treatment processes.

> Supply Zones Areas Inspected

The treatment processes at the Charleville WTP were examined.



1. Source Protection

		Answer
1.1	Is the abstraction source(s) adequately protected against contamination?	No
Comment		
<p>The Charleville PWS is served by 4 no. boreholes adjacent to the WTP. On the day of the audit Borehole No. 3 and Borehole No. 4 were being pumped. Borehole No. 2 and Borehole No.5 were not in use but are standby boreholes. Cork County Council stated that Borehole No. 1 has not been used in the last 20 years and is not accessible. The wellheads for Borehole No. 4 and Borehole No. 5 were inspected and found to be adequately sealed. It was not possible to inspect the wellhead for Borehole No. 2 and Borehole No. 3 due to the location of the wellheads.</p> <p>Uisce Éireann and Cork County Council could not confirm when local landowners have been written to in relation to their obligations under the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022.</p>		



2. Management and Control

		Answer
2.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	No
Comment		
<p>The protozoal compliance log treatment requirement has not been finalised for the Charleville WTP. The log treatment requirement has been provisionally classed as Log 3 pending the review of the sanitary survey. Monitoring for <i>Cryptosporidium</i> has been undertaken 4 times per annum since 2019. The monitoring results were provided at the audit. There have been no <i>Cryptosporidium</i> detections to date.</p>		



3. Fluoridation

		Answer
3.1	Is the fluoridation dosing system appropriately controlled?	No
Comment		
Duty / standby fluoride dosing pumps are provided but there is no automatic switchover between the duty and standby dosing pumps in the event of pump breakdown. Cork County Council reported the pumps are routinely changed on a six month frequency.		



4. Alarms, Inhibits & Oversight Audits 2023

	Answer	
4.1	Is there a chlorine residual monitor located after contact time for verification of primary disinfection?	No
Comment		
<p>There is a residual chlorine monitor at the WTP to verify chlorine dosing. There are two distribution lines served by the Charleville WTP (a) Lisballyhay and (b) Churchtown.</p> <p>There is a residual chlorine monitor on the outlet of the Lisballyhay Reservoir after contact time. The contact time calculation provided by Uisce Eireann indicated an effective contact time of 39.23mg.min/l.</p> <p>There is no residual chlorine monitor on the Churchtown Line to verify contact time. The contact time calculation for the first house served off the Churchtown line indicated an effective contact time of 21.89mg.min/l.</p> <p>The Charleville PWS has not been through the Uisce Eireann Disinfection Programme.</p>		

	Answer	
4.2	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment		
<p>Automatic plant shutdown at the Charleville WTP is triggered by the low chlorine alarm setpoint (0.4mg/l) and high chlorine setpoint (2.2mg/l) after a 15 minute time delay. The time delay is greater than the 5 minute time delay specified by the EPA Water Treatment Manual: Disinfection.</p>		

	Answer	
4.3	Are plant performance trends accessible remotely?	No
Comment		
<p>Plant performance trends can be viewed on site for turbidity, UVT and residual chlorine and the trends were observed on the day of the audit. Cork County Council stated that it is not possible to view the trends for the Charleville WTP on the Countywide SCADA or North Cork SCADA at present. A contractor is investigating to fix the issue with the SCADA.</p>		

Recommendations

Subject	Charleville Audit	Due Date	12/07/2023
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. (i) Install a residual chlorine monitor with alarms to verify contact time on the Churchtown line; (ii) confirm the expected completion date for the Uisce Éireann Disinfection Programme works and (iii) review and update the 15 minute time delay on the plant shutdown linked to the high and low chlorine alarm setpoints to meet the requirements of the EPA Water Treatment Manual: Disinfection. 2. (i) Confirm the protozoal log treatment requirement for the supply; (ii) confirm how the protozoal log deficit will be addressed and (iii) undertake monitoring for <i>Cryptosporidium</i> as per the Uisce Eireann Rationale for Determining the Frequency of <i>Cryptosporidium</i> in Public Water supplies. 3. (i) Submit photographs of the wellhead completion for Borehole No. 2 and Borehole No. 3 and (ii) ensure Borehole No. 1 is adequately sealed so it does not provide a preferential pathway for pollution of the aquifer. 4. Liaise with Cork County Council to ensure that local landowners have been written to in relation to their obligations under the <i>European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022</i>. 5. Confirm when the works to allow SCADA trends to be viewed on the Countywide SCADA and North Cork SCADA have been completed. 6. Install duty and standby fluoride dosing pumps with automatic switch over in the event of the failure of one of the fluoride dosing pumps. <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 12/07/23 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>		