

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 | Fingal Zone 3 |
| Organisation | Uisce Éireann |
| Scheme Code | 0900PUB1003 |
| County | Dublin |
| Site Visit Reference No. | SV28013 |

| Report Detail | |
|--------------------|----------------|
| Issue Date | 26/07/2023 |
| Prepared By | Michelle Roche |

| Site Visit Detail | | | |
|----------------------------|---|------------------|-------|
| Date Of Inspection | 20/07/2023 | Announced | No |
| Time In | 10:15 | Time Out | 11:10 |
| EPA Inspector(s) | Michelle Roche | | |
| Additional Visitors | | | |
| Company Personnel | Uisce Éireann: Daniel Behan, Jessica Evans, Tselopile Tlou. Fingal County Council (working in partnership with Uisce Éireann): Tom Brennan, Brian Reynolds, Michael Donohoe. | | |

> Summary of Key Findings

1) The WTP was shutdown at the time of the audit. A pinhole leak had occurred in the delivery line from the sodium hypochlorite day tank to the dosing pumps. The leak resulted in automatic shutdown of the sodium hypochlorite dosing pump which in turn resulted in automatic shutdown of the boreholes pumps and WTP. The alarms and inhibits in place at the WTP operated satisfactorily to ensure no water quality incident occurred.

2) There is no continuous online chlorine residual monitor located on the rising main or the inlet to Jordanstown Reservoir to verify that contact time has been achieved. Uisce Éireann provided an estimated completion date of Q4 2023 for this installation.

> Introduction

The Fingal Zone 3 public water supply serves a population of approximately 27,000 from Jordanstown Reservoir. Treated water from the Bog of the Ring Water Treatment Plant and Leixlip Water Treatment Plant mix at Jordanstown Reservoir. This audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome drinking water at the Bog of the Ring Water Treatment Plant (WTP), with a focus on the alarms and inhibits in place and the procedures in place to ensure appropriate oversight of treatment processes.

Raw water at the Bog of the Ring WTP is currently obtained from 2 no. boreholes (BH2 and BH3) adjacent to the WTP. Five boreholes in total were drilled at the Bog of the Ring wellfield in 2002. Treatment consists of pressure filtration, chlorination and fluoridation.

> Supply Zones Areas Inspected

The treatment processes at the Bog of the Ring WTP were examined.



1. Incident Management

| | Answer |
|---|--------|
| 1.1 Was the incident suitably alerted to the plant operators, escalated and managed in order to maintain water quality and protect public health? | Yes |
| Comment | |
| <p>1) At the opening meeting of the audit Fingal County Council stated that the Bog of the Ring WTP had automatically shutdown at 12:15am on 19/07/2023 and remained shutdown during the audit.</p> <p>2) A pinhole leak had occurred in the delivery line from the sodium hypochlorite day tank to the dosing pumps. The leak triggered the low flow alarm on the dosing pumps and the pumps shutdown. The dosing pump shutdown triggered and automatic shutdown of the borehole pumps, which in turn triggered a shutdown of the WTP.</p> <p>3) A plant shutdown alarm was generated and received at Leixlip WTP. Operators at Leixlip WTP provide out of hours cover for the Bog of the Ring WTP.</p> <p>4) The alarm and inhibits in place at the Bog of the Ring WTP operated satisfactorily to ensure no water quality incident occurred.</p> | |



2. Management and Control

| | Answer |
|--|---|
| 2.1 | Has the protozoal compliance log treatment requirement been identified for the water treatment plant? |
| | No |
| Comment | |
| 1) The protozoal compliance log treatment requirement has not yet been identified for the Bog of the Ring WTP. | |
| 2) No <i>Cryptosporidium</i> monitoring currently takes place on the treated water. | |



3. Alarms, Inhibits & Oversight Audits 2023

3.1

Is there a chlorine residual monitor located after contact time for verification of primary disinfection?

Answer

No

Comment

1) To achieve an effective contact time of 27.46mg.min/l the volume of the clearwater tank at the WTP and the rising main from the WTP to Jordanstown Reservoir is required. There is no continuous online chlorine residual monitor located on the rising main or the inlet to Jordanstown Reservoir to verify that contact time is achieved before treated water enters the reservoir and mixes with treated water from Leixlip WTP.

2) Uisce Éireann provided an estimated installation date of Q4 2023 for a continuous online chlorine residual monitor to verify contact time.

3) A continuous online chlorine residual monitor is located on the outlet of the clearwater tank at the WTP to verify that chlorine dosing has occurred.

Recommendations

| | | | |
|--------------------|---|-----------------|------------|
| Subject | Fingal Zone 3 - Bog of the Ring WTP Audit Recommendations | Due Date | 26/08/2023 |
| 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. Install a continuous online chlorine residual monitor with alarms to verify contact time before the Jordanstown Reservoir. Confirm the estimated completion date of Q4, 2023 provided at the audit.2. Confirm the protozoal log treatment requirement for the supply; (i) confirm how any protozoal log deficit will be addressed and (ii) undertake monitoring for <i>Cryptosporidium</i> as per the Uisce Eireann <i>Rationale for Determining the Frequency of Cryptosporidium in Public Water supplies</i>. <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 26/08/23 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> | | |