Site Visit Report

Under the European Union (Drinking Water) Regulations 2014 as amended, the Environmental Protection Agency is the supervisory authority in relation to Irish Water and its role in the provision of public water supplies. This Audit was carried out to assess the performance of Irish Water in providing clean and wholesome water to the visited public supply.

The audit process is a sample on a given date of the facility's operation. Where a finding against a particular issue has been reported this should not be construed to mean that this issue is fully addressed.

Water Supply Zone

Name of Installation	Bunclody
Organisation	Irish Water
Scheme Code	3300PUB1425
County	Wexford
Site Visit Reference No.	SV25676

Report Detail

Issue Date	15/07/2022
Prepared By	Joanne Creedon

Site Visit Detail

Date Of Inspection	04/07/2022	**Announced**	Yes
Time In	12:05	**Time Out**	13:05
EPA Inspector(s) **Additional Visitors**	Joanne Creedon		
Company Personnel	Irish Water: Samantha Keane Wexford County Council (under service level agreement to Irish Water): Michael Murphy, John Breen, Enda Flynn.		

Summary of Key Findings

(1) Disinfection consists of chlorination and ultraviolet (UV) treatment. The disinfection system was operating satisfactorily during the inspection.

(2) Automatic shutdown occurs only in the case of high and low UV alarms and not in the case of high and low chlorine alarms.

Introduction

The Bunclody (Carrickduff)Public Water Supply (PWS) produces approximately 688m3/d of water serving a population of 2,129 (EDEN figures). The audit focused on the disinfection system at the Bunclody (Carrickduff) Water Treatment Plant (WTP). The site has been assessed under Irish Water's Disinfection Programme and reported to the EPA as having been fully commissioned and available on telemetry on 31/07/2019.

Supply Zones Areas Inspected

This audit assessed the ultraviolet (UV) and chlorination disinfection systems at the Bunclody (Carrickduff) WTP.

1. Disinfection Programme Audits 2022

		Answer
1.1	Is chlorination used for primary disinfection?	No
	Comment	
	UV is used for primary disinfection. Chlorination is secondary.	

		Answer
1.2	Did Irish Water confirm the type of chlorine disinfectant in use?	Yes

		Answer
1.3	Are there duty and standby chlorine dosing pumps in place?	Yes

		Answer
1.4	Is there automatic switchover in the event of failure of one of the chlorine dosing pumps?	Yes

		Answer
1.5	Is the chlorine dosing rate flow proportional?	Yes

		Answer
1.6	Is the chlorine dosing rate fixed?	Not Applicable

		Answer
1.7	Can IW / LA confirm the target residual chlorine level for the final water leaving the plant?	Yes

		Answer
1.8	Is there a continuous residual chlorine monitor on the final water?	Yes

		Answer
1.9	Can data trends from the online residual monitor be viewed on site?	Yes

		Answer
1.10	Are there low and high chlorine alarm settings?	Yes

		Answer
1.11	Is there an alarm response procedure available on site for responding to chlorine alarms?	Yes

		Answer
1.12	Is there automatic shutdown of the supply in the event of the chlorine level dropping below the low chlorine alarm setting or rising above the high chlorine alarm setting?	No
	Comment	
	No automatic plant shutdown in the event of the chlorine level dropping below the low chlorine alarm setting or rising above the high chlorine alarm setting. Chlorination is secondary disinfection and UV is primary disinfection. UV has automatic shutdown in the event of failure and this shuts down the chlorination as well.	

		Answer
1.13	Are service due / monitoring instrument calibration dates for the chlorine monitors within date?	Yes

		Answer
1.14	Is the site specific contact time being achieved?	Yes

		Answer
1.15	Is the minimum effective contact time of 15 mg. min/l being achieved?	Yes

		Answer
1.16	Is the residual chlorine level ≥ 0.1 mg/l at the extremity of the distribution network?	Yes

		Answer
1.17	Is UV treatment used for primary disinfection?	Yes

		Answer
1.18	Are there duty and standby UV units in operation?	Yes

		Answer
1.19	Is there automatic switchover between the duty and standby UV units in the event of failure of the duty unit?	Yes

		Answer
1.20	Is there automatic plant shutdown in the event of UV units failing or operating outside of their validated range?	Yes

		Answer
1.21	Is there continuous monitoring of the UV units to verify operation within validation range at all times?	Yes

		Answer
1.22	Can data trends from the online UV monitor(s) be viewed on-site?	Yes

		Answer
1.23	Is there an alarm response procedure available on site for responding to UV alarms ?	Yes

		Answer
1.24	Are service due / monitoring instrument calibration dates for the UV units within date?	Yes

		Answer
1.25	Is a copy of the validation certificate for the UV disinfection system available on site ?	Yes

		Answer
1.26	Is there a plate on the UV unit with the validation criteria?	Yes

		Answer
1.27	Did IW confirm that the UV units are operating within the validation range?	Yes

		Answer
1.28	Have all relevant staff received training on the disinfection upgrades?	Yes

Recommendations

Subject	Bunclody - Disinfection Audit	**Due Date**	15/08/2022
Action Text	**Recommendation(s)** **Irish Water is responsible for ensuring a safe and secure supply of drinking water. To address these issues, Irish Water should implement the following recommendation(s) without delay.** 1. Irish Water should install automatic shutdown of the plant linked to the low and high residual chlorine alarm settings. **Follow-Up Actions required by Irish Water** During the audit, Irish Water representatives were advised of the audit findings and that action must be taken as a priority by Irish Water to address the issues raised. This report has been reviewed and approved by Michelle Minihan, Drinking Water Team Leader. Irish Water should submit a report to the Agency on or before 15/08/2022 detailing how it has dealt with the issues of concern identified during this audit. The report should include details on the action taken and planned to address the various recommendations, including time frame for commencement and completion of any planned work. The EPA also advises that the findings and recommendations from this audit report should, where relevant, be addressed at all other treatment plants operated and managed by Irish Water. Please quote the Action Reference Number DW20220075 in any future correspondence in relation to this Report.		