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	Cahersiveen PWS 017H
Organisation	Irish Water
Scheme Code	1300PUB1050
County	Kerry
Site Visit Reference No.	SV18355

Report Detail

Issue Date	30/09/2019
Prepared By	Cliona Ni Eidhin

Site Visit Detail

Date Of Inspection	09/09/2019	**Announced**	No
Time In	10:30	**Time Out**	13:00
EPA Inspector(s) **Additional Visitors**	Cliona Ni Eidhin Regina Campbell		
Company Personnel	Irish Water: Tommy Roche, Oliver Harney Kerry County Council: Kathleen Casey, Paul Neary, Adrian O'Sullivan, Seamus O'Mahony.		

Summary of Key Findings

1. The Cahersiveen drinking water treatment plant was found to have inadequate treatment for the removal of THM precursors since the ozononation treatment stage ceased operation in January 2019.

2. The Cahersiveen supply is to be reviewed by Irish Water to determine the most suitable source and plant upgrade options. Following completion of this, a programme of works with timeframes should be furnished to the EPA as soon as possible.

Introduction

The Cahersiveen drinking water treatment plant is located over 10 Km west north west of the town of Cahersiveen. Water is abstracted from the Coulagh River and treated by slow sand filtration and chlorination using ultra low bromate sodium hypochlorite. Ozonation is in place for removal of THM precursors but was not operational on the day of the audit and had not been operational since January 2019. The plant produces treated water at a rate of 1,200 m3/day with little seasonal variation and serves a population of approximately 1,370.

Supply Zones Areas Inspected

The audit of the Cahersiveen Public Water supply focussed on the following:

- treatment processes currently in place; and
- ascertaining the status of Irish Water's plans to progress a permanent solution for maintaining compliance with the parametric value for THMs. The reservoir in the network was not visited as part of the audit.

1. Source Protection

		Answer
1.1	Is the abstraction source(s) adequately protected against contamination?	Yes

Comment

While the source was adequately protected, Japanese Knotweed (*Fallopia japonica)* was observed growing a short distance from the abstraction point.

2. Filtration

		Answer
2.1	Are the filters designed and managed in accordance with EPA guidance?	Yes

Comment

The plant operator briefed the auditors on the procedure for cleaning/scraping slow sand filter media. However, this procedure and the criteria for returning the filter to service post cleaning/scraping were not documented.

		Answer
2.2	Does monitoring indicate that the filters are operating effectively?	Yes

Comment

Filters were found to be operating effectively, however:

- The turbidity alarm was set at 0.5 NTU. It was noted that, if the plant is to be operated per the turbidity approach, a turbidity alarm setpoint of 0.2 NTU would be appropriate. If the plant is to be operated per the Log Credit approach, a turbidity alarm setpoint of 0.5 NTU would be appropriate but further treatment would likely be necessary downstream of slow sand filtration.
- See comment on overdue calibration in 'Site Specific Issues', Section 6.

3. Reservoirs and Distribution Networks

		Answer
3.1	Is treated water in tanks and reservoirs suitably protected against contamination?	No
	Comment	
	It was observed by the auditors that the mesh on the proprietary vent covers on the treated water reservoir within the treatment plant site was damaged and no longer insect-proof.	

4. Treatment Process Chemicals

		Answer
4.1	Are treatment process chemicals appropriately managed and stored?	Yes

Comment

Chemicals were appropriately managed and stored. However it was noted that the sodium hypochlorite bulk storage tank label required updating to reflect that ultra-low bromate sodium hypochlorite is used at the Cahersiveen plant.

5. Management and Control

		Answer
5.1	Are relevant alarms dialled out via a cascade system to allow a timely response by plant operators?	Yes

Comment

Alarms alert the plant operator via a dial out cascade. However there is no documented procedure for responding to alarms.

		Answer
5.2	Is the plant suitably managed and controlled to maintain the designed log credit on each treatment stage?	No

Comment

The log credit approach is not applied at the Cahersiveen treatment plant currently. The implications of the log credit approach to turbidity alarm set-points requires examination. See comments in filtration section.

6. Site Specific Issues

		Answer
6.1	Are the details on EDEN for this supply correct?	No

Comment

It was noted that details for the Cahersiveen PWS on the EPA's EDEN portal refer to a well source, in addition to the river source. It was confirmed that only the river source is in use.

		Answer
6.2	Are instrument calibrations within date?	No

Comment

Calibration of turbidity monitors was found to be overdue since May 2019.

		Answer
6.3	Is the supply in compliance with the parametric value for THMs?	No

Comment

There have been 2 THM exceedances in the Cahersiveen PWS in recent months. The treatment process in place to remove THM precursors has not been operational since January 2019 and no timeframe for its repair has been identified.

Recommendations

Subject	Cahersiveen Audit Recommendations	Due Date	30/10/2019
Action Text	**Recommendations** 1. Management and Control: Irish Water should progress, as a priority, the review of the Cahersiveen DWTP and determine the most suitable source and plant upgrade options for the reduction of THMs in the supply. A programme with timeframes should be prepared and the EPA should be kept informed on progress in this regard. 2. Source Protection: Irish Water should ensure that its protocols for the eradication of Japanese Knotweed at water treatment facilities are followed on this issue at the Cahersiveen DWTP. 3. Filtration: Irish Water should review the turbidity alarm setpoints in the context of the full plant review and upgrade, having regard to the minimum turbidity performance criteria of either the log credit approach or the turbidity approach. 4. Filtration: Irish Water should ensure that a procedure is documented for the response to a triggered turbidity alarm. 5. Treated water storage: Irish Water should ensure that vents on treated water storage reservoirs are sealed with insect-proof mesh. 6. Management and Control: Irish Water should ensure that procedures for all routine plant operational and maintenance activities are documented and recorded. 7. Management and Control: Irish Water should ensure that all dosing and monitoring equipment (including probes) is maintained and calibrated in accordance with the manufacturer's instructions and in advance of due dates. 8. Site Specific Issues: Irish Water should continue to monitor the final water for THMs at a minimum frequency of monthly. 9. General: Irish Water should ensure that the details pertaining to the Cahersiveen PWS on the EPA's EDEN portal are corrected. **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 Regina Campbell, Drinking Water Team Leader. Irish Water should submit a report to the Agency on or before 30/10/2019 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 DW2018/171 in any future correspondence in relation to this Report.		