

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	Central Regional-Lough Guitane (H) 400F
Organisation	Uisce Éireann
Scheme Code	1300PUB1016
County	Kerry
Site Visit Reference No.	SV28130

Report Detail	
Issue Date	13/09/2023
Prepared By	Regina Campbell

Site Visit Detail			
Date Of Inspection	06/09/2023	Announced	Yes
Time In	10:00	Time Out	13:00
EPA Inspector(s)	Regina Campbell Paul Buckley		
Additional Visitors			
Company Personnel	Uisce Éireann: Tommy Roche, Michael Byrne. Glanua (operating under DBO contract to Uisce Éireann): Ross O' Sullivan, Cormac O' Sullivan.		

> Summary of Key Findings

1. The audit found that the Central Regional Lough Guitane Water Treatment Plant is a very well operated and managed plant. Trends and data viewed at the audit showed satisfactory drinking water being produced.

> Introduction

The Central Regional Lough Guitane Public Water Supply (PWS) serves a population of 62,281 (EDEN figure) including Killarney, Tralee, Castleisland, small villages and rural hinterland. The current supply volume was reported at the audit to be about 39,000 m³/day which is higher than the figure reported in Eden of 34,071 m³/day.

The sources of the supply are Lough Guitane and the Owgariff River. At the time of the audit the main source in use was Lough Guitane due to low water levels in the river.

The raw water is treated at the plant as follows: coagulation (using PAC), flocculation, dissolved air flotation (DAF) clarification, rapid gravity sand filtration, UV disinfection, chlorination, final water pH correction (using lime) and fluoridation. There are also backwash and sludge treatment facilities in operation. There are works underway in order to commence alkalinity boosting using sodium bicarbonate at the plant and to commence orthophosphate dosing at Scart Reservoir in the network to address lead issues in parts of the network.

Plant construction and commissioning was completed in 2018. The plant is currently managed on behalf of Uisce Éireann by Glanua under a Design Build Operate (DBO) contract. The contract was put in place for 7 years and began in 2018.

The audit was undertaken as part of the EPA's ongoing assessment of the largest 26 public water supplies nationally in order to assess the general operation and management of the plant.

> Supply Zones Areas Inspected

All the main water treatment plant areas were inspected.



1. Filtration

	Answer	
1.1	Are the filters designed and managed in accordance with EPA guidance?	Yes
Comment		
6 no. multi media filters were in operation on the day of the audit. Data and trends viewed showed that the filters were operating effectively. Suitable alarms and inhibits are in place.		



2. Disinfection

	Answer	
2.1	Is the disinfection system verified using monitors and alarms, with trended data recorded and accessible?	Yes
Comment		
Chlorination provides primary disinfection with a 3 log crypto barrier provided by ultraviolet disinfection. Trends and data viewed were satisfactory.		
A cascade system is in place to respond to any alarms.		

	Answer	
2.2	Is the UV system suitably validated?	Yes
Comment		
There are 3 no. Wedeco UV units in operation which operate on a duty/duty/standby basis. The UV units are validated to the US UVDGM protocol. UV units were operating within their validated range.		

	Answer	
2.3	Is the residual chlorine monitored at a suitable sample location after contact time has been completed?	Yes
Comment		
Residual chlorine is monitored after contact time. Trends and data viewed were satisfactory.		



3. Management and Control

	Answer	
3.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	Yes
Comment		
<p>Uisce Eireann confirmed that the protozoal log treatment requirement for the source is 3 log. The log treatment provided by the plant is 6 log.</p> <p>If an additional log is to be claimed for the filtration step, then suitable turbidity alarms and inhibits should be put in place as per the EPA Water Treatment Manual: Filtration.</p>		

	Answer	
3.2	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment		
<p>The low UVT setpoint of 69% should be raised to 70% to be in line with the validated operating range for the UV units.</p>		

	Answer	
3.3	Have the recommendations from the previous EPA audit been satisfactorily addressed?	No
Comment		
<p>The following recommendations have not been closed out since the previous audit undertaken on 27/10/21:</p> <p>Recommendation 1: Confirm that the updated risk assessment of secondary chlorination stations and chlorine monitors and alarms in the network has been completed and that any risks identified have been addressed.</p> <p>Update: The latest update from Uisce Eireann said that the scope of work for this project is to be reassessed and handed over to asset delivery once finalised by end of Q3 2023.</p> <p>Recommendation 2: Submit details of the project (including timeframe and location of dosing) to commence orthophosphate dosing in the supply.</p> <p>Update: Uisce Éireann said that dosing will commence by the end of November 2023.</p> <p>Recommendation 3: Submit details of the project (including timeframe) to amend pH correction at the plant in order to address alkalinity issues in the final water.</p> <p>Update: Uisce Éireann said that dosing will commence by the end of November 2023.</p>		

Recommendations

Subject	Central Regional Lough Guitane Audit Recommendations 2023	Due Date	13/10/2023
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. Commence ortho phosphate dosing in the network.2. Commence sodium bicarbonate dosing at the plant.3. Amend the low UVT inhibit to 70% UVT.4. a) Review the Alarm and Inhibit Assessment Record for the plant to ensure that details are correct and b) Install alarms and inhibits in accordance with the EPA Filtration Manual if an additional log credit is to be assigned to the filters.5. Provide the timeframe to address any risks identified at the secondary chlorination stations in the network.6. Update EDEN with the current production volume for the 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 13/10/23 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>		