

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	Aughacasla PWS 005D
Organisation	Uisce Éireann
Scheme Code	1300PUB1022
County	Kerry
Site Visit Reference No.	SV29539

Report Detail	
Issue Date	06/02/2024
Prepared By	Regina Campbell

Site Visit Detail			
Date Of Inspection	18/01/2024	Announced	Yes
Time In	11:30	Time Out	13:15
EPA Inspector(s)	Regina Campbell		
Additional Visitors			
Company Personnel	Uisce Éireann: Tommy Roche Kerry County Council (working in partnership with Uisce Éireann): Seamus O' Mahony, Brendan Hannafin, John O Donnell		

> Summary of Key Findings

1. Uisce Éireann have replaced the lake source for the Aughacasla Public Water Supply with groundwater in order to minimise the risk of Trihalomethane formation in the network. Satisfactory Trihalomethane monitoring results were submitted in order to verify the effectiveness of the works. The supply was removed from the Quarter 4 2023 Remedial Action List issued by the EPA.
2. The groundwater passes through three slow sand filters and a new granular activated carbon unit. It is intended to keep the slow sand filters and carbon unit in operation in the event that the groundwater source needs to be supplemented with lake water at certain times of the year.
3. The chlorination system at the plant has been upgraded as part of the Uisce Éireann disinfection programme.

> Introduction

The Aughacasla Public Water Supply (PWS) serves a population of 340 with a supply production of 369 m³/day. The supply is now served by three boreholes and treatment at the water treatment plant (WTP) consists of slow sand filtration, Granular Activated Carbon (GAC) and chlorination.

The supply was added to the EPA Remedial Action List (RAL) in January 2022 due to elevated levels of Trihalomethanes (THMs) above the standard in the Drinking Water Regulations. The purpose of the audit was to assess the upgrade works that had been implemented under the RAL action programme and to verify if the Aughacasla supply could be removed from the RAL.

Other aspects of the treatment processes outside of those related to THM formation were also assessed as part of the audit.

> Supply Zones Areas Inspected

The boreholes, slow sand filters and GAC unit were inspected.



1. Source Protection

		Answer
1.1	Is the abstraction source(s) adequately protected against contamination?	No
Comment		
<p>1. The supply is sourced from 3 no. groundwater boreholes with the majority of the source from Borehole 3 which came into production in the summer of 2023.</p> <p>2. There is no online turbidity monitor on either of Boreholes 1 and 2.</p> <p>3. Boreholes 1 and 2 have not been sealed and capped in accordance with EPA Advice Note 14: Borehole Construction and Wellhead Protection. This finding is outstanding since the last EPA Audit undertaken on 17/09/21.</p>		



2. Filtration

2.1

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

Answer

No

Comment

The groundwater is passed through the three slow sand filters prior to chlorination. It is intended to keep the slow sand filters in operation in the event that the source needs to be supplemented with lake water at certain times of the year.

Online turbidity monitors are operational at the outlet of each filter and levels were satisfactory on the day (ranged from 0.028 NTU to 0.09 NTU). The individual filter turbidity monitors are not connected to the PLC and SCADA and alarms and inhibits are not operational.

There is a turbidity monitor on the combined filtered water and on the final water with results trended and alarms and shutdowns in place. Turbidity trends reviewed were satisfactory.



3. Disinfection

3.1

Is the residual chlorine monitored at a suitable sample location after contact time has been completed?

Answer

Yes

Comment

A disinfection upgrade was completed at the plant in 2022 and satisfactory monitoring systems, alarms and inhibits are in place at the plant.



4. Management and Control

	Answer	
4.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	No
Comment		
<p>The protozoal compliance log treatment requirement for the plant has not been updated since the lake source was replaced with groundwater sources.</p> <p>The plant is monitored in accordance with Uisce Éireann's Rationale for Determining the Frequency of <i>Cryptosporidium</i> in Public Water Supplies and there have been no exceedances notified to the EPA.</p>		

	Answer	
4.2	Are instrument calibrations within date?	No
Comment		
<p>The individual filter turbidity monitors and the UVT monitor post the GAC unit did not have calibration stickers displayed.</p>		



5. Supply on the Remedial Action List

	Answer
5.1 Do the audit findings support progress made with the Remedial Action List upgrades?	Yes
Comment	
<p>Uisce Éireann have completed the following upgrade works at the water treatment plant in order to minimise the risk of THM formation in the network:</p> <ol style="list-style-type: none">1.The development of three new groundwater production wells for the source over the last two years. The proportion of groundwater being used has gradually increased with the phasing out of the surface water source. At the audit the source was 100% groundwater. It is intended to keep the slow sand filters and carbon unit in operation in the event that the source needs to be supplemented with lake water at certain times of the year.2. The installation of two Granular Activated Carbon units with a continuous UVT monitor post the GAC units. There is a trigger level of 85% on the UVT monitor which will require the changeout of the carbon unit with new units if reached. The UVT monitor immediately post the GAC unit is not connected to the PLC or SCADA. Uisce Eireann said that this connection work will be done by the end of February 2024. There is also a UVT monitor on the final water with a trigger level of 85% UVT. <p>THM verification data was submitted from August to December 2023 which demonstrates compliance with the THM drinking water standard.</p>	



6. Site Specific Issues

		Answer
6.1	Is the final water compliant with the pH parametric value?	No
Comment		
<p>On the day of the audit the final water pH monitor was reading 6.04 which is less than the lower pH parametric value of 6.5.</p> <p>Kerry County County said that the switchover from the lake source to groundwater has resulted in a drop in the pH of the final water and that the plant may need final water pH correction to be installed.</p> <p>There were no pH results available for the network at the audit.</p>		

Recommendations

Subject	Aughacasla Audit 18 01 24 Recommendations	Due Date	06/03/2024
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. Ensure that the UVT monitor post the GAC unit and the turbidity monitors on each filter are alarmed and connected to the PLC and SCADA. 2. Ensure a record is maintained of a) the dates when the lake source is in used and b) the volumes of lake water used. 3. a) Confirm the log treatment requirement for the plant; b) Put in place measures to address any log treatment deficit and c) Continue to monitor the supply in accordance with Uisce Éireann's Rationale for Determining Monitoring of <i>Cryptosporidium</i> in Public Water Supplies. 4. a) Undertake any works necessary to ensure that the well-heads of boreholes 1 and 2 are capped and sealed in accordance with EPA Drinking Water Advice No. 14: Borehole Construction and Wellhead Inspection and b) Install an online turbidity monitor on boreholes 1 and 2. 5. Ensure all plant monitors are calibrated in accordance with manufacturers instructions and clearly labelled to show the date of calibration and the next calibration due by date. 6. a) Review the final water pH results at the plant and undertake investigative sampling for pH in the network; b) Add the supply to the Uisce E ireann National pH file and c) Put remedial measures in place to restore compliance with the pH parametric value in the supply. <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 06/03/2024 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>		